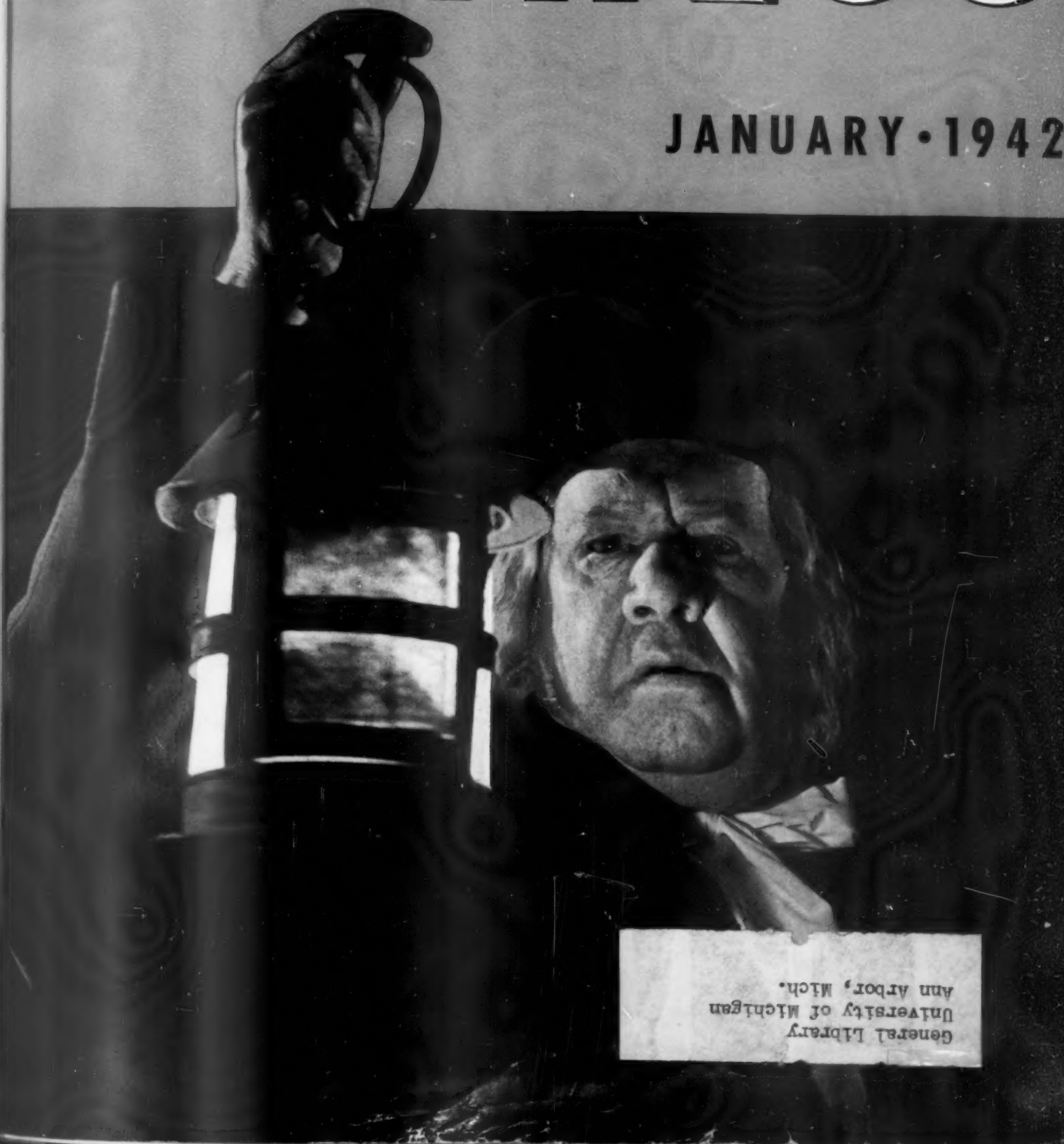


NATION'S

JAN 9 1942

BUSINESS

JANUARY • 1942



General Library
University of Michigan
Ann Arbor, Mich.

Busy
with a great big

capital B

Telephone lines are humming as they never have hummed before.

About 1,300,000 new telephones have been installed in the past year. An average of 85,000,000 calls are completed every day. Both are all-time records.

The job is big and getting bigger but we're working at top speed to keep pace with every need. And increasing our facilities as fast as possible.

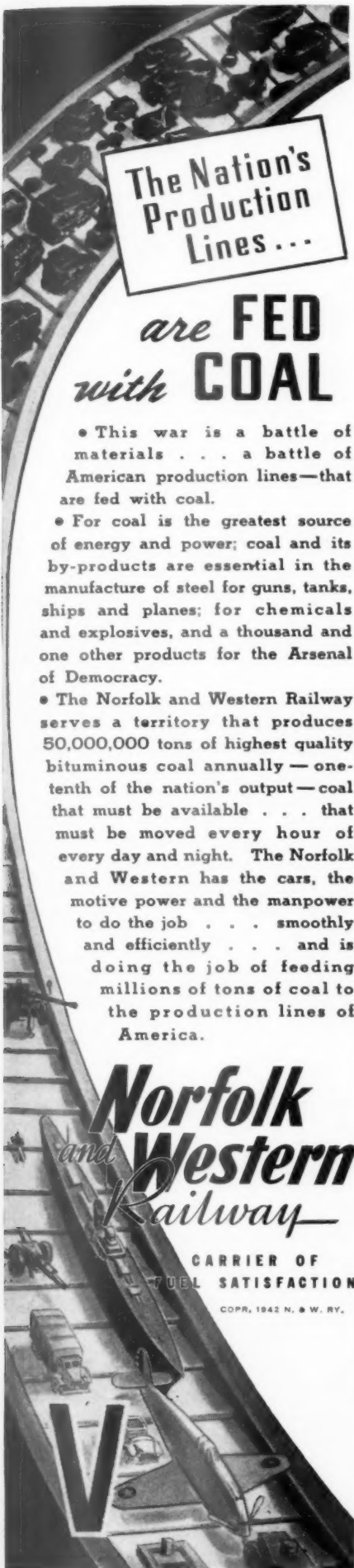
The Bell System put about 400 million dollars into new construction in 1941 and will spend millions more this year.



BELL TELEPHONE SYSTEM



"THE TELEPHONE HOUR" IS BROADCAST EVERY MONDAY EVENING OVER THE N. B. C. RED NETWORK



The Nation's
Production
Lines...

are **FED**
with **COAL**

• This war is a battle of materials . . . a battle of American production lines—that are fed with coal.

• For coal is the greatest source of energy and power; coal and its by-products are essential in the manufacture of steel for guns, tanks, ships and planes; for chemicals and explosives, and a thousand and one other products for the Arsenal of Democracy.

• The Norfolk and Western Railway serves a territory that produces 50,000,000 tons of highest quality bituminous coal annually — one-tenth of the nation's output—coal that must be available . . . that must be moved every hour of every day and night. The Norfolk and Western has the cars, the motive power and the manpower to do the job . . . smoothly and efficiently . . . and is doing the job of feeding millions of tons of coal to the production lines of America.

**Norfolk
and Western
Railway**

CARRIER OF
FUEL SATISFACTION

COPR, 1942 N. & W. RY.

THROUGH THE *Editor's Specs*

E Pluribus Unum

UNION in purpose and effort is the fundamental principle of our institutions. When we face inward, we may have our little differences among ourselves, but when we turn outward and confront a common enemy, we are not 48 sovereign states, or manufacturers, or employees, or cotton-growers, or bankers, or lumbermen; we are the United States of America!

Our history represents a great experiment. We have been testing the question whether or not a set of principles could unite in a supreme effort peoples of divergent traditions.

Even our friends have been skeptical. Our enemies have confidently counted upon our failure. Their dismay will be proportioned to our success; for we have turned to the world of affairs beyond our borders and presented ourselves as a nation intent upon a purpose as high as any people ever pursued.

The test has been met. The measure of our success alone remains to be determined. That measure is to be diminished by no individual and no group of individuals. In our internal affairs there will be error and mistake, because of the inherent limitations of human ability. But any individual attempt at conscious diminution of our full success is doomed to extinction in the wrath of a nation that has been aroused to defend its principles as its birthright. Moral fiber is demanded of every citizen, and there are no exceptions.

Let's lose our heads deliberately

SINCE we must go to war it is perhaps fortunate that the overt act burst upon us so suddenly and ruthlessly that we were stripped of every shred of indecision and left no other course but to fight.

At one stroke the Japanese have done for us what we could not do for ourselves. They have unified the nation. How, not why, starts the questions of the day.

With many peace-time hatchets of controversy buried, every American still has the right to full and free discussion of methods. Now, even

more than in peace, there is needed in civil life a loyalty of a higher sort than that of "yes men." It will be easy to agree with or keep silent about unwise and wrongly conceived methods, difficult to dissent and propose wise ones against a popular clamor. But true loyalty means putting our brains and our judgment as well as our hands at the service of the country. That makes a balanced unity. Any other unity would be only skin-deep and unequal to the occasion.

Profiteering—new style

THE word "profiteer" is especially odious in time of war. It has been variously applied to industry, labor, merchants, and farmers in general.

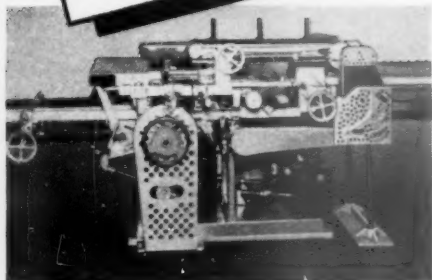
Surprising and shocking is the charge made by Tennessee's Senator McKellar, champion and chief sponsor of T.V.A., that David Lilienthal, chairman of T.V.A. "is the biggest profiteer that has been revealed by the emergency."

Basis of McKellar's indictment is that T.V.A. charges Wolf Creek Ordnance Plant one cent per kilowatt hour for power, while other T.V.A. customers in the vicinity pay four mills; that T.V.A. offered to supply Government owned powder plant at Chattanooga with power for \$780,000 a year, while the Chattanooga Power Board, which buys its power from T.V.A., gave the same service for \$318,000. Various remedies have been suggested for dealing with private profiteers. The significance may be deeper than appears when the Government profiteers upon itself.

The Dons have a word for it

THERE is much talk today of "freedoms." President Roosevelt has boiled down the Bill of Rights, with its basic freedoms of press, speech, religion, assembly, petition and trial by jury, to two, adding freedom from want and freedom from fear. President Hawkes of the United States Chamber names "the freedom to work" as basic.

Now comes an inspiring suggestion from Dr. James W. Young, professor of marketing and advertising at the University of Chicago. It is what the



In building wrapping machines, we never overlook the fact that your package has a *future*—may not always remain the same as when the machine is bought. For example, you may at some later date wish to adopt a new packaging improvement that has proved to be a real sales builder. . . . And conditions, such as we have today, may require a change in wrapping material, package sizes, etc.

FLEXIBILITY that provides for CHANGE

Nearly all of our machines are adjustable for a wide range of sizes. They are adaptable to any kind of wrapping material and numerous styles of wrapping. Their speed is adjustable to accommodate the size and character of the package. And they permit various forms of hook-up to cartoning or filling machines. In short, they have all the flexibility which present or future conditions may demand.

Consult our PACKAGING CLINIC
for a better package and lower costs

Write or phone our nearest office



Over a Quarter Billion packages per day are wrapped on our machines.

PACKAGE MACHINERY COMPANY

Springfield, Massachusetts

New York Chicago Cleveland Los Angeles Toronto

Spanish call *personalismo*. That means the freedom to be yourself, to buy with your money psychological satisfactions, even those you may prefer to biological necessities, "to live your life in your own way, to give expression to your own personality, to live dangerously or foolishly if you choose, not to let the making of a living interfere too much with living."

War's cultural note

TO Miss Harriet Elliott, in charge of Consumer Division, Price Fixing Administration, our gratitude for revealing the cultural benefit to be derived from shortage of washing machines. The family-owned washing machine, she discovers, is used one day and idle six days a week. This economic error is a hangover from the horse and buggy, or washboard days, when many persons had mistaken pride in private ownership.

That the communal washing machine has advantages over a community with individually owned washing machines is made clear by Miss Elliott. A community center is established and a washing machine installed "where classes can meet, study groups be formed, information exchanged, advice given and programs planned."

While the washing machine is used cooperatively by the neighborhood, the mutual improvement and cultural society "can learn, in real and practical terms, his (sic) significance to the nation, the responsibilities placed upon him (sic) as a consumer, and how to discharge those responsibilities in this national crisis." (We don't like that unconscious lapse into the masculine. It sounds ominous—Ed.)

Some of the topics suggested for discussion while the old washing machine is doing family chores, are: "How long can I make my refrigerator last?" "How to wash rayon," and kindred subjects related to establishing and maintaining democracy throughout the world. Those interested in making wash day an occasion for cultural development may arrange their own programs. For those in doubt as to appropriate topics for discussion on wash day, the Consumer Division, Miss Elliott announces, has a bulletin called "A Handbook on National Defense Consumer Information."

The washing machine will win the war and write the peace, provided there is only one to the community.

This should be mediated

FROM the Los Angeles Chamber of Commerce comes an idea calculated to evoke loud hosannas from all harassed organization men. It proposes nothing

less than a "closed chamber of commerce" with check-off.

It's always a tough chore to get and keep enough members, say the Los Angeles folks, so why not simply decide on a scale of initiation fees and dues for every business firm in the country and collect these amounts from their customers at the point of sale. A hiring hall committee would approve the list of firms local consumers would be permitted to buy from, while denying memberships to all others. Furthermore, all the small independent chambers in the area would have to suspend and leave the entire "jurisdiction" to one big organization.

This plan would enable the chamber to pay better wages, hire more staff men and work shorter hours, argues General Manager Leonard E. Read with tongue-in-cheek logic. But on second thought he decides maybe it isn't so hot after all. Consumers might be selfish and fail to appreciate its merits. So the Los Angeles chamber will go on as in the past seeking voluntary support for its program, and when it fails, accepting resignations as just deserts.

Surcease for weary scribes

WRITERS and journalists find certain compensations flowing out of the declaration of war by Congress. No longer must they delve in every paragraph for synonyms for "the defense program" but can use a common three-letter word which has not been hackneyed by 40 centuries of journalism. "Emergency" can now be used without quotes to distinguish the real from the phony. Hitler will be moved over to share the seat of infamy with Hirohito and provide variety on the printed page. Mussolini already has been shoved off the bench by the British North African forces.

A call for Bill Hart

TWO high executives in the movie industry reluctantly testify in a federal court that their companies have each paid more than \$100,000 to West Coast labor racketeers for "protection."

Where was Hollywood's pioneer stock while these hold-ups were going on? Where were the modern Buffalo Bills, the Kit Carsons, the Roy Beans and all the dauntless racket busters of the silver screen whose courage the movie colony has celebrated in its thrilling romances?

Why didn't the threatened producers call on heroes like Clark Gable, Gary Cooper, Tyrone Power and Douglas Fairbanks, Jr. to protect them in this drama of real life?

Strange it is that in a city where

two-fisted, hair-trigger he-men are always itching to annihilate a pack of villains, Willie Bioff and George Browne found no opposition until Westbrook Pegler laid them low with his faithful typewriter.

Man bites dog

THOMAS G. (Tommy the Cork) Corcoran, New Dealer Extraordinary, defended himself before the Senate Defense Investigating Committee that in acting as "legal broker" for private companies interested in defense contracts he had used his knowledge to "make the burden of Government lighter" in matters affecting his clients. Our heart goes out to Mr. Corcoran. We hope that he makes a deeper dent than business men under like scrutiny have been able to do. He has put a plea for understanding in the very words which have often been offered for business. Hear ye him:

"I think I have proved I can work for many years for a cause, for little. I think it is no secret in Washington that I have constantly been ready for many months to serve that cause again anywhere that I could really function.

"But I never understood that, in this country, when working to help other men earn money, it was wrong for me to earn money, in proportion, too."

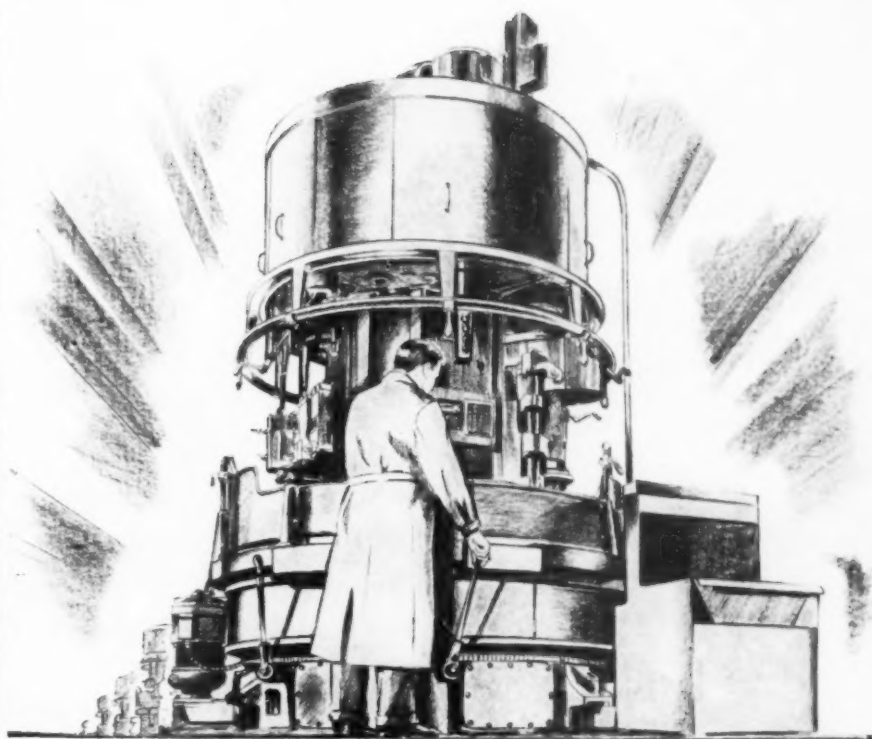
Securities over the counters

"OUT OF STOCK" is a phrase that disappointed customers may expect to hear with increasing frequency in the war months to come. But one commodity the stores will always have in sufficient quantity is U. S. Defense Savings Stamps and Bonds.

Benjamin H. Namm, author of "A Retailer Looks at the War," in this issue, is chairman of the Retail Advisory Committee of the U. S. Treasury. He has called on the retailers of America to assume responsibility for selling \$1,000,000,000 of these stamps and bonds in 1942. That is roughly two per cent of expected total retail volume for the year, or 20 cents for every \$10 of sales. Attaining this figure calls for the same sort of salesmanship that sells merchandise.

Retailers everywhere should respond enthusiastically to Mr. Namm's appeal. Thus they will

1. Perform a patriotic duty by helping to finance the war.
2. Provide a brake against inflation by siphoning off family income and reducing demand for civilian goods.
3. Aid in cushioning the inevitable post-war drop back to normal conditions.
4. Voluntarily provide funds that otherwise the Government would have to obtain by some form of compulsion, "forced loans."



BULWARKS OF FREE ENTERPRISE

For nearly 30 years, American Industry has recognized that accuracy, productive capacity and reliability are synonymous with Bullard Mult-Au-Matics and the Mult-Au-Matic Method.

These qualities are the reason for their playing a vital part in the production of engines, tanks, ships, guns and shells to bring complete victory for America and the American Way of Life. And after victory is achieved, they will play an equally important part in the pursuit of peace.

THE BULLARD COMPANY

BRIDGEPORT

CONNECTICUT

BULLARD

Not "TOO LITTLE" — not "TOO LATE"

IN four tragic words is written the epitaph of most of the peaceable and freedom-loving countries of Europe.

Because there was "too little too late" there is neither peace nor freedom in Belgium, in Holland, in Norway or in Greece.

Because of "too little too late," the French have neither liberty nor equality; the Serbs are hunted down in their own mountains; the Poles, Czechs and Slovenes are learning that the only alternative to freedom is slavery.

From such bitter lessons America is now seeking to learn.

We propose not to do too little. We are striving not to be too late.

And the first chill fact we must face is that neither can be accomplished in any lax or self-indulgent spirit.

To be specific, we have here at Goodyear adequate facilities for supplying all your normal needs in tires and tubes, and hundreds of other useful rubber products.

It would have been easy, by peaking up our accustomed activities, to add to that peacetime production a considerable volume of military rubber goods.

But Goodyear realized months ago that "considerable" might be too little, and it might come too late.

We recognized that the only sure



way to produce enough and to produce in time was to establish the rigid rule, "Defense First!"—that both time and materials used in manufacturing peacetime wares must be adjusted to that.

So today Goodyear's first concern is the production of bulletproof tires and bullet-sealing gasoline tanks, half-track and tank treads, barrage balloons and airships, rubber lifeboats and pontoons, and scores of other Army and Navy needs — *in quantities required for America's impregnable defense.*

As things appear now, we do not believe this all-out defense program will interfere seriously with your ability to get tires and tubes. There should be enough

in all sizes to meet essential civilian needs.

It may happen at times that your Goodyear dealer will not be able to supply your particular size instantly. But if you'll be patient, he'll be able to get it for you.

If you do need tires now, you'll be wise to get Goodyear's first-line "G-3" All-Weather — *because tests prove it averages thousands of miles longer tread wear.*

You'll be wise, too, to equip your tires with LifeGuards — Goodyear's modern safety successor to inner tubes. With LifeGuards you can

drive your present tires "as is," or retreaded, many months longer than normally, without danger from blowouts.

Putting LifeGuards in new "G-3" All-Weathers, in your present Goodyears or tires of any other make, is the best way we know of stretching out your tires' useful life safely.

And stretching your tires' life right now helps stretch the rubber supply, which in turn helps make sure that in arming America there will not be too little and it will not come too late.



All-Weather, LifeGuard—T.M.'s The Goodyear Tire & Rubber Company

As We Draw the Sword

WAR is, and has been, foreign to the thinking and planning of the United States. The leaders and citizens of other nations have always expended a large part of their energies in thinking and planning for war. Unwillingly and against our nature, we must now make destruction the first order of the day.

It can be a long war or a shorter one. It can be a stalemate with armed camps all over the world, with suspicion and hate corroding indefinitely the hearts of men. It is in our power to get it over with in the shortest possible period.

An unpleasant job calls for all-out attention, a singleness of purpose, an intensity of effort. No dawdling, no recrimination, no philosophizing as to what might have been. That should be put on the calendar for discussion after peace comes.

The strength of the pack is the wolf and the strength of the wolf is the pack. This is the Law of the Jungle and war is a jungle game. The individual citizen, on the front and at home, must develop strength. This means a development, not only of the physical but also of the spiritual. The qualities of courage, that brook no fear of foe, or of neighbor's motives; of sacrifice, that cries out for more to do rather than more to get; of work, that loses sight of clock and pay envelope; of loyalty, not blind servility, but dedication to a cause and tolerance for all engaged in battling for it.

To us, particularly, is this spirit of the individual necessary. A democracy, making war, is not a lovely sight. Wrenching, muddling, confusion. Free institutions breed men and women unaccustomed to the short, hard words of com-

mand, and to the surrender of personal judgment. Our commanders should realize this and match with understanding the understanding expected of the individual.

Mr. Bernard Baruch, in his report in 1921, emphasized that the success of the war effort had rested not on compulsion and control, but primarily upon what President Wilson called "the spontaneous cooperation of a free people." It is interesting to read, in the light of today, the text in which the phrase occurs:

There is a general theory deeply ingrained in our political habits to the effect that Government should not interfere with the processes of business any further than is necessary to preserve the principle of fair competition and to insure the observance of ordinary legal obligations. For development and progress, individual initiative is relied upon. The public welfare is to be served by the spontaneous common purpose of a free people.

The strength of the pack will come from a process of education, a costly tuition, but, if we will it, there can be preserved the dignity and worth of the individual if the things we are fighting to defend are never lost to mind.

National well-being is no accident. It does not just happen. To make it realistic in peace, and, more important, in war-time, requires the highest citizenship of which we are capable, each in his own little circle of influence, and all of us in that unity of purpose and action we have expressed in "We, the People." The ideal of a better America is no mirage. Who knows but that the war may be the crucible from which that ideal may be attained!

Merce Thorne

ROUND
THE CLOCK ✓
HAULING
IN THE
MOUNTAINS! ✓

TRUCK-TRAILERS HANDLE

A TOUGH JOB BETTER AND

Save Money Three Ways!



● WHEN THE F. J. KRESS BOX COMPANY, of Pittsburgh, switched to Truck-Trailers, they (1) saved literally thousands of dollars in equipment costs, (2) increased hauling output 20 percent without increasing handling costs, (3) began saving up to 20 percent in gasoline and oil.

The Kress Company has a tough hauling job. It manufactures cartons, mostly for glass jar and pottery factories in Pennsylvania, Ohio and West Virginia . . . and deliveries are generally from 30 to 150 miles, over mountain roads in the Alleghenies. Most of the year, deliveries continue right around the clock. It's a punishing job for transport equipment.

THREE-WAY SAVINGS!

About a year ago, the Kress Company bought two 10-ton Fruehauf Trailers . . . and, to pull them, one inexpensive 2½-ton truck. That was the first big saving, because three powerful trucks, costing thousands of dollars more, would have been required to carry the same load capacity!

Then the second saving . . . through the "shuttle system." The truck and driver are constantly busy . . . always pulling one Trailer while the other is being loaded or unloaded. No

wasted time for men or equipment! 20 percent more hauling output than before!

And the third saving! Since a smaller truck pulls a bigger load, it uses up to 20 percent less gasoline and oil for the same tonnage!

SO . . . THEY BUY MORE TRAILERS!

So gratifying were the money-saving and improved service that three months later the Kress Company duplicated their order . . . two more Fruehauf Trailers and one inexpensive truck!

There is probably one . . . possibly two, three or more ways . . . in which Truck-Trailers would save you money, too. A Fruehauf engineer will study your operation and give you the facts. Why not send for him . . . today?

FRUEHAUF TRAILER COMPANY . DETROIT

FACTORIES: DETROIT, KANSAS CITY, LOS ANGELES, TORONTO

World's Largest Builders of
Truck-Trailers

Sales and Service in
Principal Cities



FRUEHAUF TRAILERS

"ENGINEERED TRANSPORTATION"
Reg. U.S. Pat. Off.



IS MOTOR TRANSPORT helping to win the Battle of Production? An airplane factory in Tennessee, with highly important army contracts, is several miles from a railroad. A motor carrier hauls in all production material and hauls away many completed planes, disassembled and boxed for distant delivery. Thousands of other motor transport operators throughout the country are handling equally essential jobs!

MOTOR TRANSPORT IS ESSENTIAL TO NATIONAL DEFENSE



Courage, patriotism, morale are not enough in modern war. Unsupported by materials, they fail

The "Materials" Front as We Face Japan

WHEN MARCO POLO spun his yarns about the fabulous wealth of Cathay, he did not mention tungsten.

Probably he never heard of it, although, since it is frequently found near the earth's surface, he may have seen some. But Marco Polo was interested in gaudier metals.

He had never heard the word "blitzkrieg," although his Mongol friends employed the technique, using bone strengthened bows and tough little long-haired ponies.

Today this metal that Marco Polo overlooked will have an important vote in deciding the winner of the war which began when Japanese airplanes loosed their bombs on Pearl Harbor. If tungsten bound for the United States ceases to rumble down the Burma road,

our military production can be seriously handicapped, because tungsten is one of the unsung materials which has played an important part in our industrial advance. Most of us think of it, if we think of it at all, as the filament in electric lights, or the tip of phonograph needles. But, behind the scenes, it will contribute vitally to whatever success we may have in the conflict we have joined.

There are perhaps a score of such materials. They are quite unwarlike, most of them, and publicly anonymous. Yet war of the sort that began to engulf the world Sept. 1, 1939, when a young German officer swung open a primitive boundary gate and motioned his troops forward into Poland, would be impossible without them.



HUBBELL FROM BLACK STAR

Japan has abundant copper, though the supply is scattered and the quality inferior to ours

That young officer did not look like a superman in the newsreels which recorded the event. The next few weeks revealed, however, that something was super somewhere.

German soldiers rampaged across Poland. They repeated in Holland and Belgium. The "impregnable" Maginot line burst at the seams and *ersatz* boots goose-stepped into Paris.

Behind this almost supernatural success were things like molybdenum, magnesium, manganese, tin, nickel, lead, zinc, copper, coal, petroleum, to name a few. They made it possible for the man in armor—once blasted off the field by gun powder—to return and crunch the gunman under foot.

Without them no dive bombers would shriek out of the sky nor tanks plunge through the smoke at 60 miles an hour. On them we and our allies must depend. So must our foes.

So today, as we are marching into war, our strategy and our hope for victory depend largely on these things.

If we have them, or can get them more easily than Japan, we ought to win.

If not, our size, our courage, our national morale may avail us nothing.

With that thought in mind, let's compare our possibilities with those of the nation that has challenged us.

1 ★ Big Man vs. Little

Small difference in numbers. But we have oil. And coal. Japan has access to iron. Guerrillas bar the way. Sabotage, too. Refrigerators and tanks. 300,000 pounds of copper needed before an engine was built. A rigorous way of life. Everything is standardized. Sunken ships and conservation. Autos for officers only. Who knows about stock piles?

IN AREA, of course, we have little in common. We sprawl across half a continent, Japan huddles on small islands. There is a view that "A good big man will always whip a good little man." Perhaps that applies also to nations. However, the view that "the bigger they are the harder they fall" has had well informed supporters.

In actual population, the Japanese Empire is not as inferior to the United States as comparative areas might imply—roughly 105,000,000 to 130,000,000 although the population of Japan, proper, is nearer 75,000,000.

So, in population, Japan does not differ greatly from the United States. But there we stop so far as physical equipment may be considered as comparable. Japan has, roughly speaking, no oil while we have oil in abundance—more than any other people. Japan has, by our standards, no coal; at least not in such quantities as we have nor in comparable quality for industrial purposes.

Neither has she, nor any of her potential sources—as, for instance, Manchuria or North China—any Pennsylvania, or Ohio, or West Virginia, or Birmingham, Ala., regions. Japan has no iron, nor even copper in the sense that we have these metals in our Michigan and Lake Superior deposits, although she has an abundance of both in definite and scattered areas; but of an inferior quality.

Certainly, in the Lungyen fields in Chahar Province, in North China, Japan has access to the best grade of iron ore, perhaps, in the whole Far East, and at Anshan, in Manchuria, at Panshishu and in some of the iron deposits of Shantung, she has resources adequate in both quality and quantity for her industrial activities. But it is a long way from Chahar to the smelting works at Osaka and other Japanese cities and the way is beset by guerrillas, by the passive resistance of Chinese

peasants, by sabotage wherever possible and by lack of shipping space.

But modern war is a monster that admits of no delays; and its appetite is enormous. A 28-ton tank uses as much steel as three average sized five room houses, for instance; and all the steel used in the 2,000,000 refrigerators made in this country in 1939 would make only 20,000 light tanks.

As for copper, Buick reports that 300,000 pounds of that metal went into the power lines of its new aircraft engine plant—before a single engine could be produced.

Japan's supply of copper has been called adequate but, even in this country where, if we need it, 3,800,000,000 pounds of copper annually is not impossible, we are so jealous of our supply that Pullman Standard Car Works has for two years been cutting wires used in passenger cars to exact lengths in the storeroom. This method was adopted to prevent possible waste that might result from cutting the wires on the job.

One may run the whole gamut of the so-called

strategic and critical materials and find, as between Japan within its proper confines and the United States, approximately the same story. If we might—as we refuse to—assume Japan's permanent occupation or control of Manchuria and Korea, as well as North China, of French Indo-China and Thailand, undoubtedly Japan would fall heir to a very large increment in the resources which she commands now. But they would still be far below the resources that reside in and under the soil of the United States.

The whole Far Eastern seaboard of Asia is not the storehouse of riches that Americans have been led to believe. By and large these are poor countries in natural resources compared with the abundance that nature preserved as the heritage of the American people.

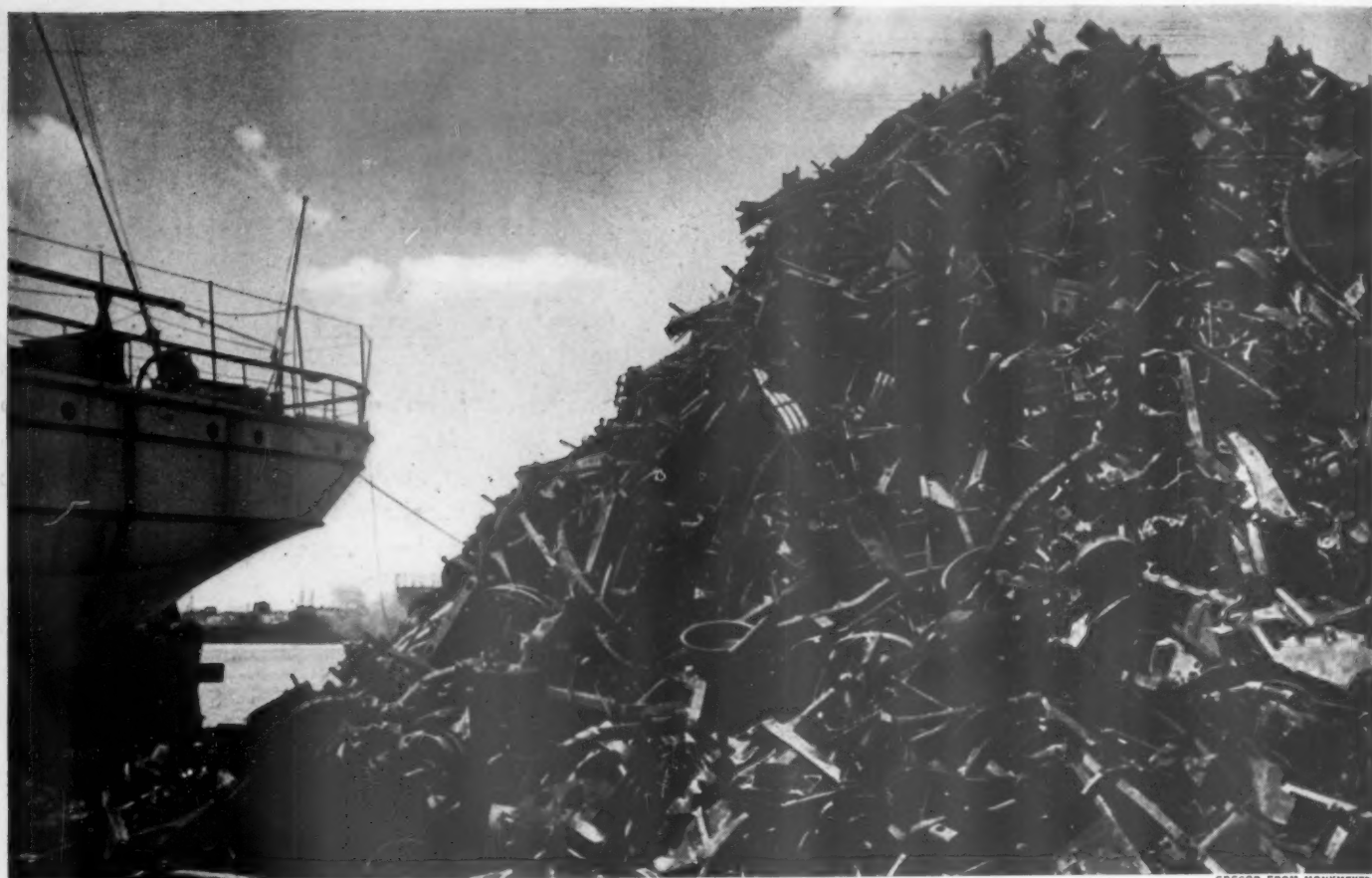
Manchuria has been touted by those who did not know as a country of immense wealth, but this wealth lies mainly in the growths from its rich soil. Beans and millet—cereals which normally do not figure greatly in the Japanese dietary, and which Japan accordingly does not greatly need.

Suppose we run through the production figures of a

Japan's coal comes from fields like this in Manchukuo. Her own islands, being principally volcanic ash, yield her few minerals

EWING GALLOWAY





GREGOR FROM MONKMEYER

Shut off from American scrap, Japan must depend on iron from the mainland, and the way is beset by guerrillas, passive resistance and sabotage

few of the most required mineral products in the conduct of war:

- Petroleum:** Japan produces in the course of a normal year around 2,500,000 barrels of crude petroleum, while U. S. production is more than 1,250,000,000 barrels.
- Coal:** Japanese production is around 45,000,000 tons a year; that of the United States from 350,000,000 to 450,000,000 tons.
- Iron ore:** Japan 750,000 tons annually; the U. S. around 50,000,000 tons.
- Copper:** Japan 100,000 tons; the United States 700,000 tons.
- Aluminum:** Japan 25,000 to 30,000 metric tons; the U. S. 150,000 to 200,000 tons.
- Lead:** Japan 10,200 metric tons; the U. S. 423,000.
- Zinc:** Japan 45,000 tons; the United States 500,000 to 600,000 tons.

In the face of such comparisons, how can Japan dare to undertake a mechanized war against us? The reason isn't ignorance. It is partly that the differences are not as great as they seem. We must remember that Japan has been living under conditions of the most rigid economy and that all available supplies are carefully utilized. The passion for standardization in that coun-

try reaches into almost every industry and occupation.

Movie producers, for instance, have been cut from 12 to three and only three pictures a month are now produced.

Sunken ships in comparatively shallow waters near Japan are being recovered for their scrap values.

Rigid controls are applied to all foods, coal, metals, transportation.

Even ship building has been standardized with only two sizes—6,800 and 4,200 tons being produced.

Glass manufacturers have been reduced in number from 960 to 50 because of shortages in soda ash and waste glass. More producers of soda ash will be weeded out because allotment of salt is being reduced by the ship shortage.

Cotton spinning factories have been reduced by 50 per cent.

Machine manufacturers are now under license and the Government has assumed control for "disposal" of all idle machinery in factories.

Motor cars are made only for officers and only one Diesel manufacturer is permitted to operate.

Sales of hundreds of commodities are entirely prohibited.

Conservation plays its part, too. Describing Japan's far-reaching regulation over raw materials—new and used—the Office of Emergency Management reports:

The Government controls disposal of all metal scrap, requiring that it be routed through a central control company which is under orders as to when and how to get rid of the materials, what amount should be sold, and what price should be paid. Curtailment of distribution and consumption can be ordered at any time by arbitrary action of the Government.

Paper conservation includes a ban on publication of newspapers and magazines not deemed of sufficient national importance to justify use of paper required. By agreement, the press publishes no papers on special holidays, and cuts out at least one morning and afternoon paper per month.

In such a regime it is possible to stretch a small supply. It is also possible that production might have been greater had the need been apparent as it undoubtedly is now. Stock piles might also have a bearing although, in spite of many estimates by many estimators, there is no proved knowledge, outside of Japan, as to the size of its stock piles in any important commodity.

Moreover, in the United States, nature, which was amazingly bountiful in some respects, was extremely niggardly in others. In many needed materials we are as lacking as Japan. Of seven of them we have practically none at all. The Government has lumped these together as "strategic materials."

2 ★ Two of the Strategic Seven

Two Swedish words. Hitler's bid for Chinese tungsten. Our need for the Burma road. Private business and Cuban manganese. By ox cart and mule back. Low grade reserves at home. Operating without profit

TUNGSTEN is one of them. Although we have widely distributed deposits in 11 western states, we have been importing 6,000,000 pounds a year. Some of this came from Argentina, Mexico, Peru and Bolivia. But the greater portion came from China. What happens to that supply if Japan controls the Pacific could be most embarrassing.

Tungsten gets its name from two Swedish words *Tung* and *sten* meaning hard stone. Its chief characteristic is its ability to stand terrific heat. Edison used it for light filaments but nobody else paid much attention to it until the World War when its use for cutting tools helped speed up our war effort and doubtless ended that conflict sooner.

In pre-tungsten days, a cutting tool which could trim off a thin shaving of steel at about 30 feet a minute was considered good. Tungsten took off thicker shavings ten times as fast. It found other uses in applications like automobile valves where heat was terrific.

American industry, flooding the world with better, cheaper machines, demonstrated the advantages of tungsten so well that, when Hitler began building up his reserve stock of materials for this war, he gathered large quantities of tungsten. From 1934 to 1939, his purchases were two or three times as much as we consumed, despite our greater steel capacity.

Even then, he opened negotiations with Wang Ching Wei in South China, offering to recognize his government in return for a tungsten mining monopoly. He planned to send the ore by rail through Russia to Germany.

Japan, however, in those days not one of Hitler's most enthusiastic converts, did not want to see Germany take this choice plum from under her nose. She assumed that she could force the metal to fall into her lap by controlling Canton and Shanghai, the ports from



AUTHENTICATED NEWS

Homogeneous as a hive of bees, the Japanese people are used to hardship and the warrior's life

which tungsten was formerly shipped. The Chinese, however, kept working the mines and sending the ore down the Burma road for delivery to us. Our loans to China have been made partly as payment for it.

According to some estimates, we today have a 10,000 ton stock pile—about half our previous yearly consumption. Our deposits in the West might yield 6,000 tons a year of concentrate ore containing 60 per cent tungsten trioxide. Mexico, Bolivia and Argentina are good for 6,000 more tons. However, we will probably use 25,000 tons next year. If Japan cuts us off from the Chinese tungsten, we can still struggle along. If Japan gets the Chinese tungsten, she will have all she needs. If not, some tungsten is produced in Korea—about 2,000 tons in 1937.

It seems likely that both nations will get all of this useful metal they need. If they don't, molybdenum can substitute in some uses. Of this metal, now used mainly in making special steel sheets, either alone or with chromium or nickel, we have ample supplies. In 1939, of the world's output of 33,000,000 pounds, we produced 90 per cent.

"We have a mountain of molybdenum in the West," is the way one man puts it.

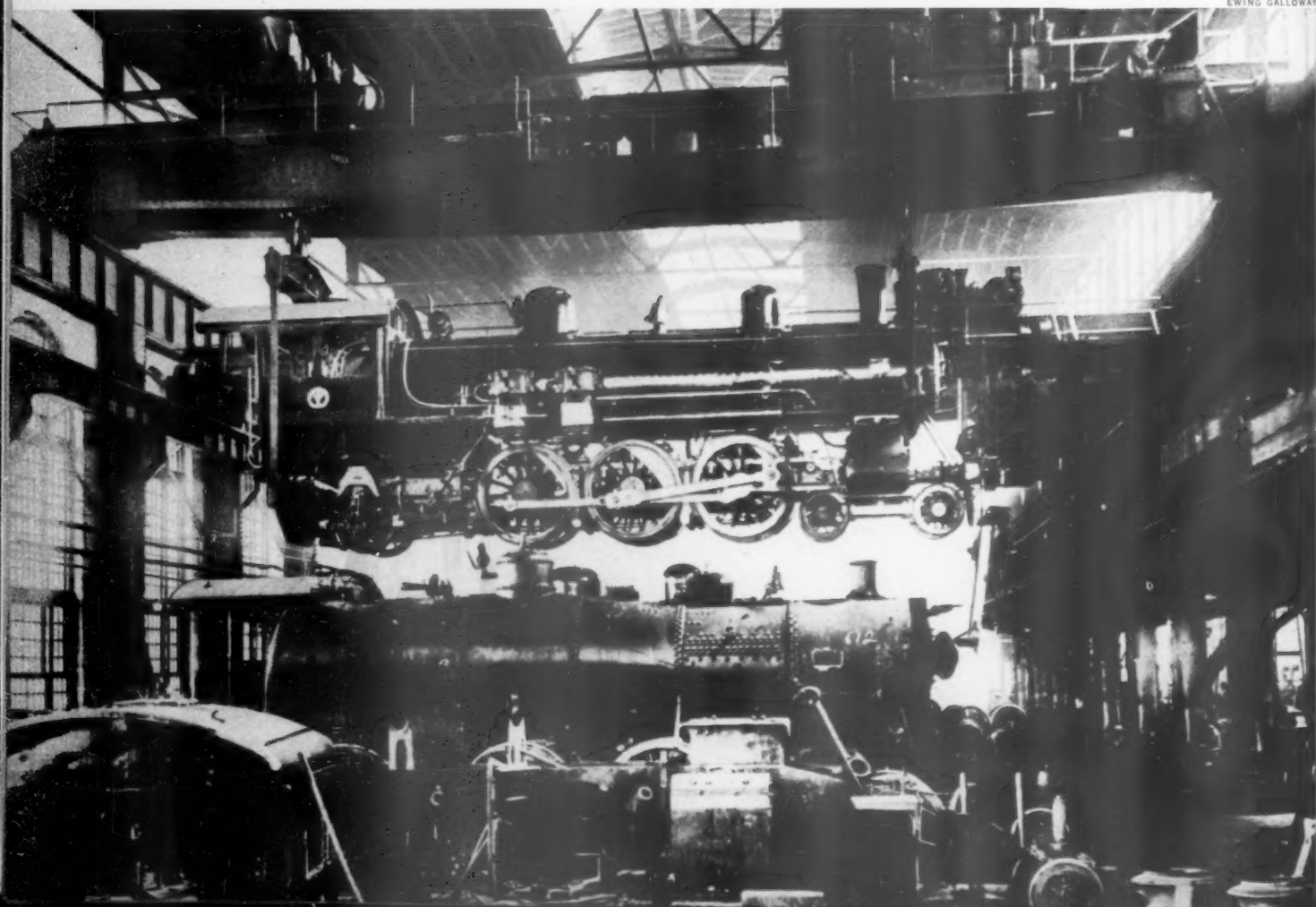
Japan can get some from Korea though its production depends somewhat on the availability of electric power. Work of damming rivers with the idea of building power plants started years ago.

Of all the strategic metals, manganese is required in the largest quantities. Used chiefly in steel making, it serves as a scavenger in the smelting furnace, removing sulphur and oxygen from the steel. It is also used in small amounts in alloys. Latest figures show that we import some 1,394,000 tons, mostly from South America, in a year—produce only 40,000 tons ourselves.

Japan, too, has to look elsewhere for manganese because, although her production increased from 15,000 tons in 1926 to 68,000 tons in 1936, she still produces less than half enough to meet her steel industry's requirements. She used to import a great deal from the Philippines but that picture changed considerably in 1940. However, deposits estimated at 10,000,000 tons were discovered in 1940 at Hsihsien, Chinchow Province, Manchukuo.

If we can keep the sea lanes open, the Philippine production will help meet our needs. British India and Russia are other sources of supply. Nearer home, Brazil, Chile and Cuba offer possibilities.

Japan has learned much in a technical way from Germany and the United States; her people have subscribed in great numbers to our scientific publications



EWING GALLOWAY

Back of Cuban manganese production is a story of American business enterprise which began in 1940 when the Cuban-American Manganese Corporation, subsidiary of the Freeport Sulphur Company, began to enlist hundreds of small Cuban property owners and peons in a program designed to supply our steel mills with this indispensable material.

World War Production Tripled

Even before America began to re-arm in earnest, company officials had decided to increase the capacity of their manganese concentrating plant near Santiago by a third. The plant was then concentrating about 130,000 tons a year. Officials knew that, in addition to the deposits they were mining themselves, remote veins of manganese were located throughout the Cuban mountains. Too small to be worked in normal times they could be made to yield a substantial quantity of ore.

But the owners of these small deposits had little technical knowledge and less capital. They could not grade the ore properly, had no transportation facilities, no money to meet pay rolls.

To overcome these obstacles, Cuban-American set up a special staff of geologists, engineers and accountants. They visited various parts of the island, studying deposits and offering technical help. They initiated a broad program of purchases under which the increased price of manganese ore was passed on to Cuban producers. They advanced money, gave social assistance, helped solve a score of problems such as the need of a central shipping agency.

Soon small loads of ore, dug and sorted by hand, began to come in ox carts and on mule back from 55 different mines, the largest supplying 7,500 tons, the smallest, about four.

As a result, Cuban shipped 240,000 tons of ferro-grade manganese ore to the United States in 1941. That is twice the 1940 production, three times as much as Cuba shipped in its biggest year during the World War.

Efforts almost as spectacular have been made at home.

Seeking a solution to our strategic metals situation, the Bureau of Mines and the Geological Survey have been carrying on surveys, examining deposits in our own territory and experimenting with methods of treating low grade ores. These researches have covered manganese deposits in Alabama, Arizona, Arkansas, California, Colorado, Georgia, Montana, Virginia, Washington and West Virginia. About one property in ten examined seems to warrant further efforts. One of



HOSMER FROM TRIANGLE

If Japan takes Malaya she will hold the source of more than half our normal tin supply

them in Montana is being developed by the Anaconda Copper Mining Company, without profit. Whatever the future may hold, we had, at the end of 1940, enough manganese readily available to meet maximum requirements then foreseen for two years.

3 ★ Tin cans, shells and drugs

A mineralogic curiosity. Perversity of can seams. Soldering with silver. Chromium from Rhodesia and the Philippines. Nickel from Canada. Antimony from China. Japs can't get it yet. Mercury at \$182 a flask. The law of supply and demand at work

THIS brings us to tin, necessary for tin plate, solder and bearing metals as well as the ubiquitous tin can. Although we have found some of this as a mineralogic curiosity in many places in this country and have spent more than \$5,000,000 on prospecting, developing and building treatment plants, almost nothing has been produced. Of the 123,892 tons we used in 1940, we produced only 44 tons. The rest came from almost everywhere, with British Malaya supplying more than half of it. Other sources included China, Hong Kong, French Indo-China, Netherlands Indies and Australia.



Japan will get little wool. Australia is cut off. Manchurian wool makes carpets, not clothes

another sound argument for keeping control of the Pacific.

Japan is as dependent on imports as we are since she produces only about one-third of her needs. She got her tin from about the same places we did. If successful, her Oriental campaign should solve this problem nicely.

Meanwhile, she does not permit the use of tin in the manufacture of containers for tooth paste and toilet goods or for containers for foodstuffs, cooking and household utensils, ornaments, smoking equipment, stationers' goods and toys—except as the goods are required for export or for military purposes.

With us, ingenuity is bolstering our tin supply in various ways, one of the most important being construction of a new \$3,500,000 plant at Texas City, Texas, for treating Bolivian ores. It is expected to produce 18,000 tons of fine tin a year. The plant will be owned by a subsidiary of the Reconstruction Finance Corporation and operated by the Tin Processing Corporation of New York which will receive a management fee of a little less than one per cent of the value of the finished tin produced.

Meanwhile, experiments in other directions are conserving such tin as we have. One of these substitutes silver for tin in such processes as soldering, the fact

that a little silver replaces a considerably larger amount of tin having an interesting effect on the price differential. Manufacturers of tin cans and those who have used tinfoil in wrapping are also coming through with plans for substitutes.

Manufacturers of tin cans are also experimenting with other materials, generally lacquers. The stumbling block in substitution here is at the seam. For the 20 per cent of cans which have no soldered seam, tin is not necessary. However, where soldered seams are required because of pressures in cooking processes or the product itself, tin has been used because solder does not stick well on iron or a lacquer coating.

Saving ten per cent

The usual method of tin plating is to dip sheet-iron into molten tin. This deposits a coat of tin about 8/10,000 of an inch thick. Faster dipping has resulted in a saving of some ten per cent here. Since about half our metal is used for coating, this is important.

We have also increased our reclaimed tin by more than 50 per cent in the past year and our stock pile of this metal is estimated at some 110,000 tons, exclusive of 15,000 tons of Bolivian tin awaiting refinement in the new Texas plant.

For chromium, of which we now need 500,000 tons a year in the making of steel furnace lining and in alloys for armor piercing shells, stainless steels, high speed tools and armor plate, we have depended on Rhodesia, Cuba and the Philippine Islands. Rhodesia's ore is the highest grade—Cuba's the lowest. Our own deposits—we have them in eight states and Alaska—contain a high percentage of iron. This is not too acceptable, although the Metals Reserve Co., set up to procure Government-owned reserves of strategic metals, has contracted for 108,000 tons of it. By last October it also had acquired 76,400 tons of imported chromium with 72,000 more on the way and 335,000 tons on order.

Meanwhile the Bureau of Mines and the Geological Survey are carrying on further experiments with domestic chromium and are hopeful. Canada, which produces a little, can increase production and Brazil shows possibilities as a source.

Nickel, needed for alloys and stainless steels, comes to us mostly from the Creighton mine of the International Nickel Company at Sudbury, Ontario. The few hundred tons that we produce ourselves are a by-product of the electrolytic refining of copper. We have a few deposits and once attempted to work some of them but the best would not be practical with nickel costing less than \$3 a pound. In an emergency, we prob-

ably could use them. Since the Sudbury mine produces almost 90 per cent of the world nickel supply, that need seems unlikely.

We use about 16,900 tons a year.

Japan is less fortunate. She needs 3,380 tons a year and has only a negligible domestic production. Apparently she will have to depend on stock piles.

Antimony, another of the strategic seven, is used almost entirely in alloys. With lead, it serves as type. It is useful for bearing metals and valuable in hardening bullets and shrapnel. The 18,000 tons we use annually represents some 45 per cent of the world production and came to us in the past principally from China. Most of that supply was cut off years ago by the Japanese blockade, but Bolivia and Mexico have been able to meet our needs. The outlook is good that we will face no shortage of this metal.

As for Japan, although there are small antimony mines in Kwangtung and Kwangsi provinces, 80 per cent of China's antimony reserves are in Hunan province which is still in the hands of the Chinese.

Mercury, necessary for explosives and also widely used in drugs and paints, is usually included among the strategic metals, although our own production has been sufficiently great to permit exports recently. Our nor-

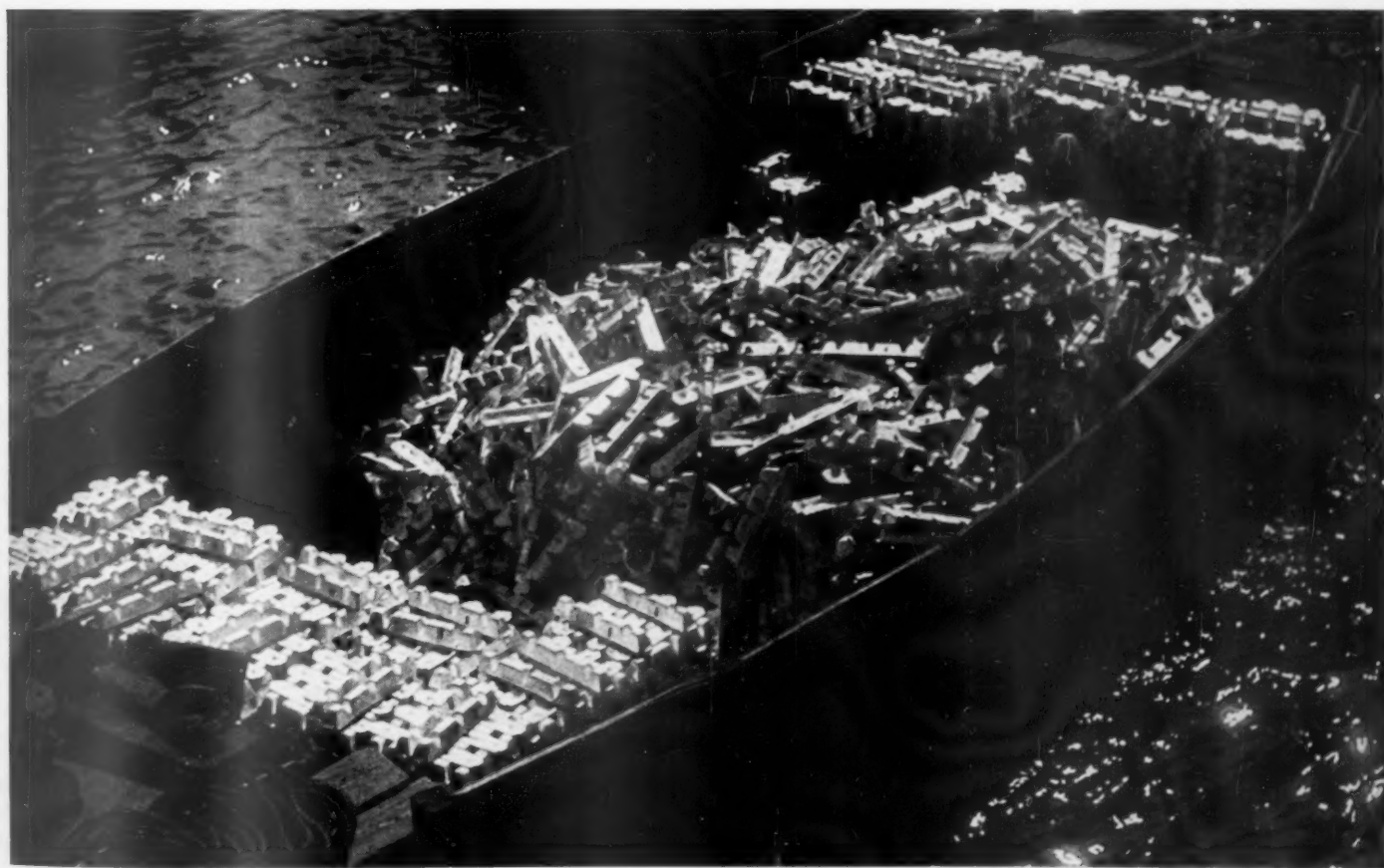
mal annual consumption is 35,000 flasks of 76 pounds each and our principal mines are in California although deposits in Texas, Oregon and Nevada are being worked.

The law of supply and demand has a heavy influence on production. For 50 years the price per flask has ranged from \$40 to \$90. It went to \$135 in World War days and lately to \$182. That price inspired a production that exceeded our needs. So apparently we shall not lack mercury.

Japan may. Her domestic output is small and other sources—Spain, Italy and Mexico—will be difficult for her to reach.

From this it appears that, in strategic metals at least, we are as well, if not better, fixed than our enemies.

The same seems to apply to other metals such as steel, zinc, aluminum and magnesium which, although important, we do not call strategic. Japan's steel industry is reportedly capable of 7,000,000 tons a year. Ours can do 87,000,000. We are the world's largest producer and user of zinc needed for shell cases, alloys and die-casting products. Strain on our facilities comes because refining capacities in Norway, Holland, France and Belgium have passed into Nazi hands. Mines and reduction plants of the Anaconda Company in Poland



EWING GALLOWAY

Japan has spent time and money trying to refine aluminum from minerals found in Manchukuo with no reported success. Our own recent shortage was temporary

have been seized. Even so, American plants have been expanded and several new refineries are being built. In addition, various substitutes can bat for zinc, especially in non-military uses.

Along this line, E. F. Hickson, Bureau of Standards chemist, has worked out a varied list of paints and varnishes which can serve in place of zinc as protective coatings for other metals.

Japan, on the other hand, has been importing more than half her zinc—much of it from us. However, her program called for self-sufficiency in this, as well as certain other materials, by 1942. Zinc deposits in South Manchuria have been known and worked for years and promising mines are being developed in Korea and Hokkaido.

As for aluminum, our threatened shortage of a few months ago was more or less temporary; something that could be met by increased production. Japan has spent time and capital trying to refine the metal from minerals in Manchukuo with no reported success.

For magnesium, the enemy is better fixed, control-

ling one of the largest deposits in the world at Tashichiao. This versatile metal, one-third lighter than aluminum, finds much to do in war. Alloyed with other metals, some forms of it go into aviation. Other forms, because they burn with a persistent tenacity, go into tracer bullets, star shells, flares and bombs.

Until recent years the Dow Chemical Company was this country's only supplier, first from brine wells in Michigan; later and more spectacularly from a plant at Freeport, Texas, which took the metal from seawater. Today a half dozen plants are in production or soon will be; the Dow plant at Freeport is being expanded and, since seawater is limitless, we should face no magnesium shortage.

4 ★ Jap fleet and our rubber

Auto tires and war. The trip round Cape of Good Hope. French Indo-China and Thailand may mean tires. Reclamation and synthetics. Silkworm fails Mikado's soldiers. Carpets but no clothes. Cotton seed fights for us. Peasants won't cooperate

METALS, however, do not win wars alone. Other materials have a hand.

Rubber, for instance. Recent announcement that automobile tires will be rationed to civilians indicates that our situation here leaves something to be desired. There are reasons:

The Japanese fleet, symbolizing all the Empire's forces, stands between the United States and its main sources of rubber supplies—British Malaya and the Netherlands Indies, which have accounted for about 99 per cent of our imports. In all likelihood, it will be some time before we are able to add freely to our present stock piles.

Japan does not have to go so far away from home base for her rubber, as French Indo-China and Thailand are entirely able to supply all her present needs.

Unless she is dislodged from those areas in now-unforeseen military developments, Japan is not likely to suffer from a lack of rubber supplies.

For ourselves, the picture, though not too bright, is not wholly black. We have, presumably, a rubber stock pile of 500,000 tons—not much against a normal annual consumption of 600,000 tons, and an estimated consumption of 700,000 to 800,000 in 1941. However, our reclamation industry has a capacity of 300,000 tons a year, which can probably be doubled, and there are always synthetics. Recently these have been multiplying rapidly and extending into many fields. Among them are Hycar, Ameripol, Neoprene, Thiokol, Butyl rubber, Perbunan, Polybutane. Production by



THREE LIONS

Japan's silk industry is lost as an economic support to war. We were her best customer

private industry now is about 12,000 tons a year. Four government financed plants, capable of 40,000 tons a year, should be in production next summer.

But, if we are short of rubber, Japan is equally short of textiles.

Ever since the development of her cotton textile industry—which supplied almost half her economic life—the Japanese have depended on the United States and India for cotton to feed their looms and spindles. The other principal producing areas include China, Southeast Russia, Brazil, Egypt, South America and South Africa.

How to lose a customer

Of these, Japan seems to have access only to China and, although China is the third producer in the world, next to India and the United States, Japanese specialists have tried for years to develop Chinese cotton production to supply Japan's needs and have not yet succeeded. American cotton seed sown in Chinese soil and climate tends to become after a few years like the hard, dry and curly Chinese cotton, which is admirable for blankets, unsatisfactory for clothes.

Wool is more necessary to western needs than to Japan, but the Japanese still have to find substitutes for it in wood pulp "staple fabric," rayon or silk. Their great source of supply—Australia—is, of course, cut off; Argentine wool may become increasingly more unobtainable, while the sheep of Manchuria grow wools to make carpets, not to make clothes. Japan has no wool industry of her own worth speaking about.

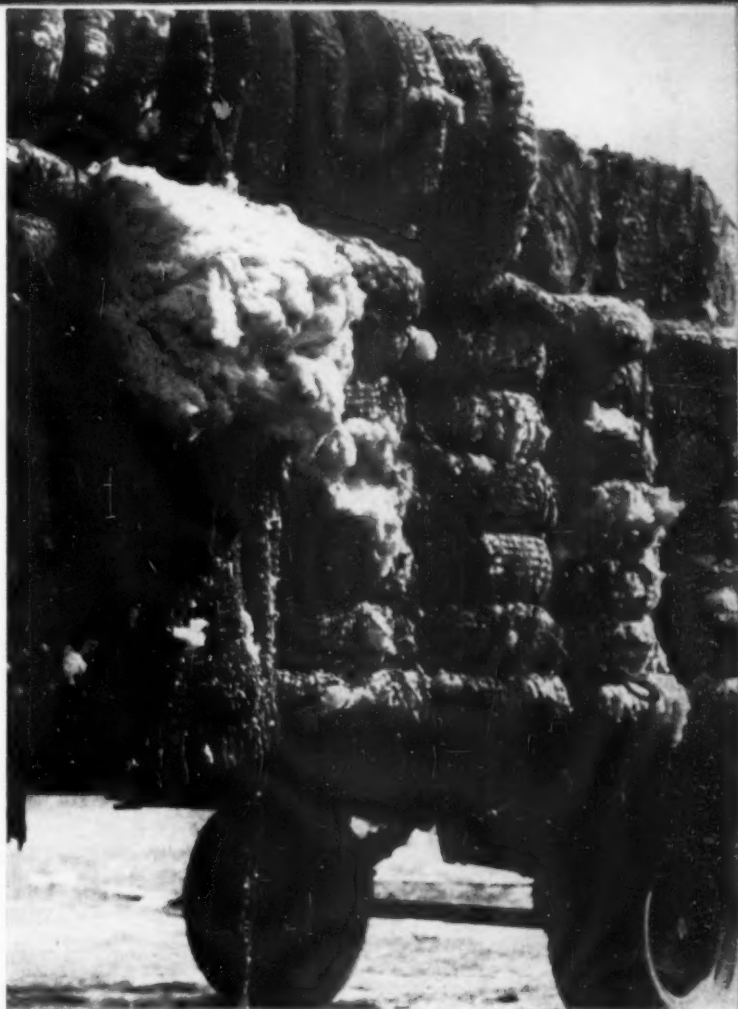
How greatly such a shortage may handicap her military effort remains, of course, a problem. In any case, we should not discount Japanese ingenuity.

The country has learned much in a technical way from Germany and from us. Of all countries outside the United States, Japan was the first in the number of subscribers to publications of the American Chemical Society in 1941.

Prominent Germans have worked in Japan and in much of her chemical industry she has followed the German pattern, and we learned in the World War how science could contribute to military effort. Camphor offers an example of how that lesson improves our position.

In World War days camphor was a natural monopoly of Formosa which is now part of the Japanese Empire. Today we have learned to make camphor, are now independent of Formosa's supply.

Science is helping in other lines, too, as the recent Exposition of Chemical Industries demonstrated.



Japanese specialists have tried to develop Chinese cotton production, have not yet succeeded

Displays there showed, among other things, elementary phosphorus, once strategic, now produced by American industry; domestic wood sawdust used in a new American process for manufacturing activated carbon for gas masks (the best material for this purpose during World War I was made from imported coconut shells).

For shortages which science has not yet met there is always conservation. Japan has forced it on her people. We have undertaken it voluntarily.

Dodge Manufacturing Corporation found, for instance, that it was accumulating eight tons of valueless cast iron borings daily. They purchased a briquetting machine which makes it possible to use these borings.

Back in 1939 the Carboloy Company, Inc., built a plant for mass production of carbide tools in spite of advice that such a plant would not be required for a decade. Today, the plant's production facilities have been expanded several times. Use of carbide tools saves valuable tungsten.

The Norton Company found ways to weld steel sections so that sheet metal products could replace malleable iron and steel castings.

Bausch & Lomb Optical Company reduced the nickel content of spectacle frames, substituted molybdenum

tool steels for tungsten, thus saving 1,300 tons of the latter metal annually.

Monsanto Chemical Company substituted paper bags for steel drums as shipping containers.

Thus, from all angles, it appears that Japan is singularly ill-matched with the United States. Actually, it would seem that her strength might be greater against any other nation because then her silk industry might have helped to support her economic structure. But we have been the market that took 80 per cent of her total silk exports and 65 per cent of her total production.

5 ★ We cannot starve them out

The zeal for conquest. Like a hive of bees. A nation girt for war. The Japanese millionaire. Fish, rice and contentment. "Face-saving." "We must lose to a first-class power."

NEVERTHELESS, Japan has several advantages that will work in her favor in a prolonged war.

Her man power is strongly united, not wholly un-



Japanese control of the Pacific will cut us off from many sources of war necessities

equal to ours in numbers and, unit for unit, far more aggressive in their zeal for conquest than our own.

The principle of Emperor-Divinity and, accordingly, of emperor worship, is a core around which they twine in a unity of interests and endeavor such as is probably approached by no other people. They are as homogeneous as a hive of bees.

Second, since they have lived throughout the course of their history close to privation and the warrior's life, their material needs are few and easily satisfied.

Although her food problems are reported to have become increasingly severe, her people manage to do a large amount of physical labor on what, to an American, would be a starvation diet. Shortages of sugar, butter, many other foods that Americans and Europeans call necessities, bother the Japanese not at all. The Japanese millionaire in business wears American clothes, eats western food, drinks cocktails, may have a radio in his office, a Rolls Royce or a Cadillac at his door. When the day's work is done, he goes to his home, slips his body into a comfortable, loose hakima and his feet into getas, or wooden sandals, and sits on a mat on the floor to eat his bowl of fish and rice. He warms his hands with the family over the charcoal brazier and, except for the expensive quality of some few simple furnishings, his way of life scarcely differs in any particular from that of the poorest fisherman or peasant. And he is content.

If the Japanese, rich or poor, has his fish and rice—the one which he gains in abundance from the surrounding sea and the other of which he raises enough, or nearly enough—you cannot starve him out.

Perhaps he has placed too great reliance on this national attribute of stamina. Perhaps, on the other hand, Japan has sources or supplies of materials which justify her leaders in believing that the United States is not too strong a foe to tackle.

On the other hand, perhaps the attack on the United States was inspired by the Oriental desire for "face-saving." Long before Pearl Harbor, an intelligent Japanese told American friends privately that his country would inevitably make war on the United States.

Asked if Japan expected victory, he shook his head.

"We know we cannot win," he said, "but we are already committed in a struggle that we cannot win. And, if Japan is to be defeated, that defeat must be at the hands of a first-class power—because Japan is a first-class power."

Whichever view one accepts, it is obvious that Japan does not intend to jeopardize her face-saving by fighting a second-class war. Only a first-class effort on our part will defeat her.

I Saw a Republic Die

By THOMAS KERNAN

THOMAS KERNAN was for several years prior to 1940 publisher of *European Vogue*, a magazine owned by The Condé Nast Publications, Inc., of New York. Mr. Kernan is Virginia born, American educated. When the Germans came to Paris, Mr. Kernan's publishing affairs there quickly ended. He has told his own story and that of the French business man in his recent book "France on Berlin Time."

"The curious thing is that, if there is something that you considered more precious than liberty, be it your comfort or your money, before you are finished you will lose it, too."—THE EDITOR

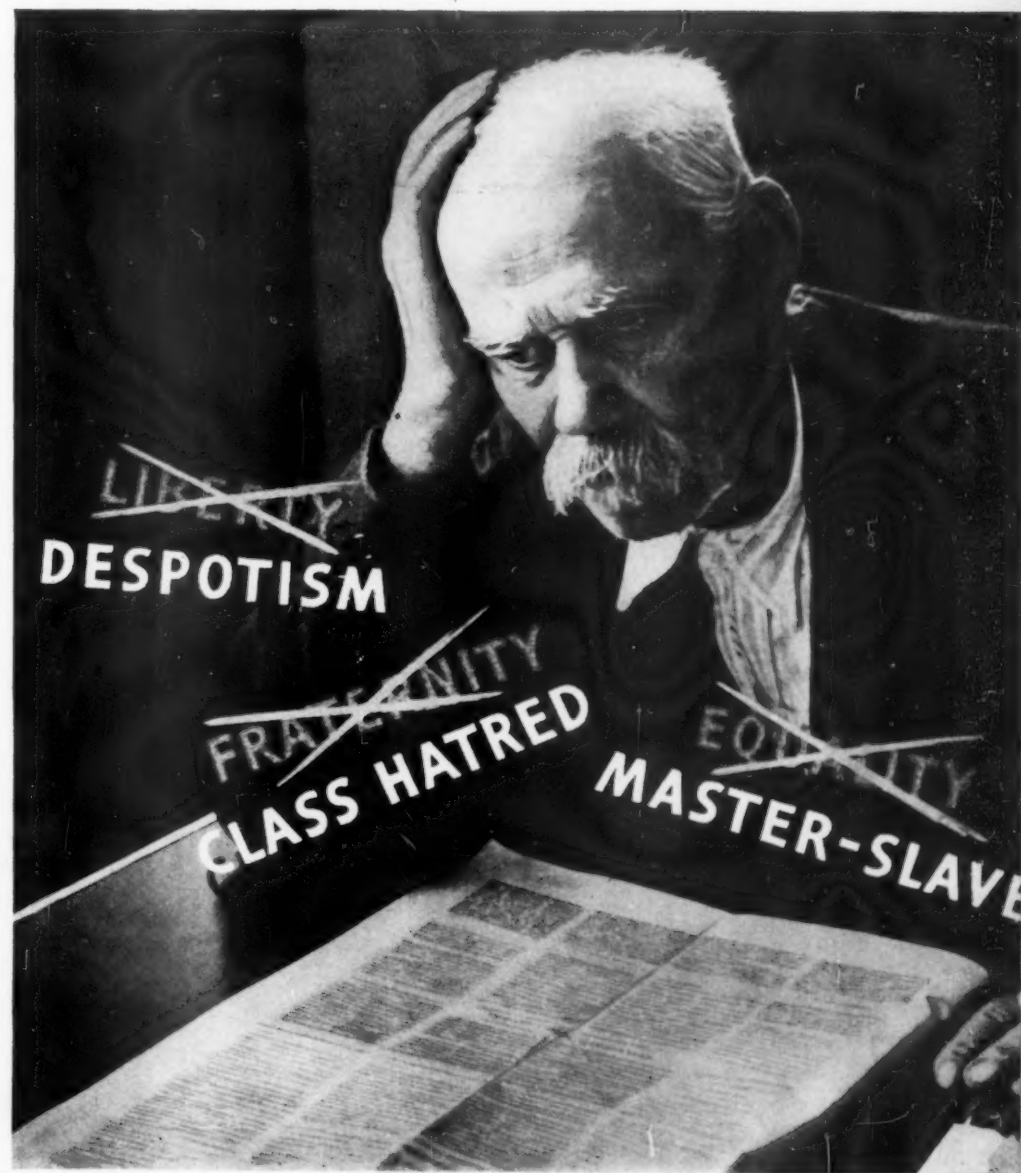
I WAS in business in France for several years before the conflict. I have seen two countries move, disunited and with misgivings, along the roads that lead to war. One of them, France, did not unite in time. The other, my own America, is miraculously united by the very form of the enemy's attack, and can yet avoid the fate that follows disunity.

A year ago the popular and facile explanation of the fall of France was to blame everything upon treason. This was too simple. It is only now, in view of our own experience at Pearl Harbor, that we appreciate the true force of an Axis blitz, and exonerate the French general staff of treason. There were certainly errors, and there were probably slip-ups, in both cases, but fair-minded Americans can now reject the theory of treason equally at Pearl Harbor and on the river Meuse.

The secret of the French military disaster is to be found in its unpreparedness, the result of France's recent political and social history.

When I review this history for you, you will be startled by the parallel to events in America.

First of all, the world depression came as a rude awakening to both pros-



KESSEL FROM FREDERIC LEWIS

perous and functioning republics, proud of a long tradition of freedom and self-sufficiency.

The crisis hit France much later than it hit us, and, on the whole, less seriously. But the reaction was the same: To offset the painful and unpopular procedure of an ordinary deflation, the masses of the electorate in both France and the United States swept in administrations which proceeded to the limitation of the powers of capital, to the succor of the underprivileged, the rights of labor, make-work projects for the unemployed, and incidentally, to the grafting of a number of social ex-

periments onto the body of the republic. To both republics, war and the threats of war came after such a time of abnormal economic change and readjustment.

French labor was set against capital; democrat against fascist; native son against immigrant. Most important of all, there was no common frontier on the question of foreign relations. There was the Peace Party, and there were the partisans of war.

There were in France, as there were here until today, the isolationists. In spite of repeated warnings since 1933 of German bad faith and ill intent, a

large section of French opinion did not believe a war was possible.

I regret to say that this group was composed principally of leading French businessmen. Their motives are understandable. The financial strain of another war meant national bankruptcy, if not the last blow to an injured capitalist system; and there was always in the mind of the conservative Frenchman the vision of Russia biding her time for the mutual exhaustion of Germany and France, to become the real winner of any conflict. If, to us, the menace of Russia seems remote, across several thousand miles of sea, to the French conservative it was immediate, because Russian arms had fought a war just across the Spanish border, and the Russian commissars, in their last retreat, came upon the soil of France.

Then, too, there was a false sense of security as far as Germany was concerned. Was there not the Maginot Line? Did not France have a great army? Was she not allied to England, Poland, and Czechoslovakia? Another European war was just a nightmare that would be dispelled when the sun came up.

A little give and take, a little common sense, a little calm discussion would settle everything with Germany. That was the belief of the French businessman in 1938. At his door—the

French magnate's—lies the political guilt for the tragic appeasement at Munich which destroyed France's arch of allies in eastern Europe, and which set an all-time high for political naïveté. It was men such as Bonnet and Flan-din, the accredited representatives of Big Business in French political life, who sponsored the appeasement policy and put it across. The capitulation of Munich, which aroused only anger and dismay among French working people, was spoken of with a complacency that I shall never forget in the meetings of French employers and the salons of the *Grande Bourgeoisie*.

Peace at any price!

IF the French business community had accepted Munich only as a dreadful necessity, because of France's military unpreparedness, the action could be understood. But they wishfully thought it a great success. They had Mr. Chamberlain's word that he had brought back the peace of Europe for a generation in his pocket. Thus the tiptop of the French business community—the peace party—became unwittingly Hitler's ally, worked thoroughly by fifth column agents, who posed, of course, as the most righteous and disinterested of Frenchmen.

Yet the war party in France was so unsavory that, if you had to choose

between their shrieks and the brayings of the peace party, you were inclined to say, "A plague on both your houses." The French war party was made up of the fellow travellers, the labor politicians, the crackpot idealists and venal journalists who flourished in France, the crossroads of Europe, in greater numbers than in any other country. Many of them were not French, or were only first generation Frenchmen. The Russian, German, Balkan immigrants were heavy in the group that, tragically enough, saw clearer than any other the road Europe was traveling.

Most Frenchmen did not go so far as Mr. Doriot, a French rightist politician, who, as early as 1936, proclaimed that the entire foreign policy of the French left had for its purpose to embroil France and Germany in a war for the eventual profit of Soviet Russia. But the seed of doubt was sown, and the antics of the war party leaders, their long record of following the party line, left the average Frenchman distrustful. These were the people who had been pacifists when pacifism was fashionable; they had promoted separatist uprisings in French colonies; they were the herald angels of France's abortive New Deal under Premier Leon Blum. No one knew how seriously to take them, or on what side of the fence they would be carolling tomorrow. It is per-

(Continued on page 56)



Frenchmen who lagged in defense now run to work for their conquerors in Germany. The German censor's caption on the photograph says they went cheerfully—

EUROPEAN

A Retailer Looks at the War

By BENJAMIN H. NAMM



EWING GALLOWAY

All business must present to the people a unified program for continuance of our way of life

RETAILING has become the third largest industry in the land, yielding only to agriculture and manufacturing. According to the United States Department of Commerce, there were 1,770,360 retailers in the United States at the close of 1940, doing an annual volume of \$43,000,000,000.

Shakespeare once asked, "Upon what meat doth this our Caesar feed that he has grown so great?" In my opinion, the Caesar of retailing has grown great because of adherence to a simple diet—service and values. Year in and year out, the American retailer has done far more than merely to buy and sell merchandise. Actually, he has functioned as "Purchasing Agent for the Public." Enlightened self-interest, if nothing else, has put him on the side of a better standard of living (which means increased purchasing power) for every man, woman and child in the country.

The values given by retailers have grown better and better each year. To-

PRICE CONTROL, credit regulation, curtailment of normal services, an end to unusual frills and trimmings, necessity to establish reserves against inevitable inventory losses—these problems confront the nation's retailers. Above all, they must close ranks with all other groups in a business unity that will sell and deliver the promise of free enterprise

day, even though the cost of doing business has gone up greatly during the past ten years, it is still possible to buy good apparel, good furniture, good accessories, at prices *lower*, in many cases, than they were ten years ago. I submit that this result speaks louder than any words as to the efficiency of the American retailer aided, of course, as he has been by the cooperation of the American manufacturer and the farmer. And those who look abroad, where regimentation and planned econo-

my have long held sway, may recall that, when the present war began, an hour's work in the average American factory bought far more in the way of food and clothing than anywhere else in the world—four times as much as in Germany, nine times as much as in Italy and 12 times as much as in Russia.

In war the retailer has a particularly important role to play. He is part of the "tripod," so to speak, upon which our fighting structure stands. The first leg of that tripod is the armed service—the

soldiers and sailors at the front. The second leg is represented by our manufacturers—who produce the machines and material necessary, especially in these days of mechanized warfare. Last, but not least, come the retailers who assemble and distribute the goods so necessary to meet the vast and ever-increasing needs of our 130,000,000 people.

Here is my own conception of the principal repercussions that the war will have upon retailing.

Volume: Retail volume may increase temporarily, then it should decrease. At present, only 20 per cent of our total production is for defense. Soon this will be doubled. Then retailers will have fewer things to sell.

Controlled prices

PRICES: It seems inevitable that price control legislation of some sort will be enacted. In this connection, however, retailers have already put their house in reasonably good order. This effort started in September, 1939, with a vigorous nation-wide campaign against "unwarranted price-increases." Some time ago, Leon Henderson testified before the House Committee on Banking and Currency as follows: "We have had extraordinary good luck with retailers in getting them to average their costs and not immediately to price all their inventory at the higher wholesale price." Actually, retail prices in 1941 have advanced about 11 per cent. Wholesale prices are up 22 per cent.

Discounts: A serious situation has arisen in the wholesale market where retailers have been forced to suffer substantial reductions in prevailing and traditional discounts. This indirect price increase has already been felt in more than 50 trades.

Credit: Credit terms have already been curtailed, under regulation by the Federal Reserve Bank. So far, the restrictions have not been onerous. Retailers must view with concern the existence in those regulations of a licensing provision. To paraphrase an old warning: "The power to license is the power to destroy."

Sales emphasis to change

MERCHANDISING: Merchandising policies must be kept flexible. Sales will have to be built up on procurable soft goods to compensate for the loss of volume on unprocurable hard goods. Metal wares should prove increasingly difficult to get. On the other hand,

wooden wares should be less difficult to procure.

Simplification: The number of styles and lines of merchandise must and will be reduced. Frills and trimmings must and can be cut down. Actually most retailers do about 80 per cent of their business on about 20 per cent of their stock.

Advertising: Retailers have shown great restraint in refraining from "scare" advertising and "buy-now"

would oblige the retailer to pay out substantial sums on merchandise that may be very slow in moving.

Reserves: All retailers are mindful of the need for setting up adequate reserves against the inventory losses that must inevitably be sustained when the "day of reckoning" comes. Retailers took a loss of approximately \$11,000,000,000 at the close of the last war. If the Government fails to recognize the need for the setting up of adequate reserves against another such loss, the impact upon retailers will be terrific.

Extent of the Retailing Structure

(Statistics from U. S. Department of Commerce)

Type of Store	Number of Stores	Volume of Business
Food	560,550	\$10,200,000,000
Eating and Drinking	305,390	3,500,000,000
Filling Stations	241,860	2,800,000,000
General Merchandise	196,910	9,700,000,000
Miscellaneous	174,300	3,200,000,000
Building and Hardware	79,310	2,700,000,000
Automotive	60,130	5,500,000,000
Drug	57,900	1,600,000,000
Furniture and Radio	52,830	1,700,000,000
Fuel and Ice	41,170	1,000,000,000
	1,770,350	\$41,900,000,000

copy, which might easily have precipitated panicky buying by consumers. The Better Business Bureaus have been extremely helpful in policing this situation. There should be further self-regulations of business along these lines, calling for the complete elimination of "free" offers and general "underselling" claims.

Supplies: This problem, already serious, is growing more acute. There must be conservation. Standardization and simplification are required. This should come through voluntary action, upon the leadership of the trade groups concerned.

Service: Certain store services will have to be curtailed, particularly those which make for duplication and waste. The present extreme latitude allowed to customers in the return of goods purchased is a case in point. A reasonable time limit should be agreed upon, without further delay.

Taxes: The burden of the new retail excise taxes on cosmetics, jewelry and furs is heavy. A new tax bill is under consideration and there may be a broadening of excise taxes. There is discussion of a general manufacturer's excise tax and also of a general retailer's floor tax. The latter, if enacted,

last November. This is only slightly less than the average monthly loss in all industries during 1937, the year of "sit-down" strikes. With the outbreak of war, strikes in defense industries should become a thing of the past.

Look beyond the war

NO ONE can deny that the immediate future is dark. Not dark with despair but dark because so many things must be done—hard things that have to be done quickly. But let us never lose sight of the fact that, by the long view, the future is bright. This dark hour is but an incident in the great history of a free people who are determined at all costs to be forever free.

In this long view we must try to see beyond the war itself to the time when we shall once more take up the pursuits of peace. At that time, as has recently been pointed out, we are likely to find ourselves in one of these situations:

1. A world policed by Great Britain and ourselves, or
2. a world policed by Germany, or
3. a period of armed non-belligerency with each nation attempting to live within its borders, without engaging in international trade.

(Continued on page 70)

through the cafeteria lines in their mid-day half-hour. The rationing scheme is growing slowly, mostly because Nelson is trying to avoid slambang methods. But for all that, every man and woman is under constant pressure to do more. Holidays and long weekends and sock-foot evenings by the open fire with wood at \$20 a cord are being forgotten. There is a promise of relief in the fact that centralized buying will be the government rule soon, but that is off-set by the increasing pressure for more buying of more things in more places.

We Learned in Twenty Years

THOSE who saw Washington during the first world war say today's Washington is different. It's angrier, for one thing. The Japs in their early performance



managed to get our mad up to the top of the thermometer. It's less hysterical, colder, with no fat ladies in khaki pants swivelling through the streets. It is going about this war as a job of work. Practically without exception the labor leaders declared a no-strike rule. Business men and manufacturers who had been finagling a little found their hearts in their jobs and began to produce. Yesterday's legitimate complaints were buried. They may be unburied when the job is done but they seem to be forgotten today. Some of the canning industries had been pointing to the fact that canned turkey and boned chicken and red salmon had been taken from our market in order to feed the sick and wounded in Europe. Thanks, almost entirely, to the sons of Heaven those wounded suddenly became our wounded.

That was one thing the Japs had not planned.

Garlands for Knudsen

PATIENT Bill Knudsen seems to have weathered the chill winds which blew sharp icicles around his ears a few weeks ago. Even before the Japs struck, his critics were admitting that he knows the job of production, and was beginning to produce. He knew how to compromise, too, and many a manufacturer who was beginning to toss and rumble over his wrongs was soothed over a pot of beer in the Mayflower lounge. Now and then Knudsen would slither—and the word is slither for all of his size—around the room with one of his several preferred dancing partners. The dogooders who had bothered him with their plans for "social gains" began to slip off his massive shoulders until, when the Japs struck, they were in a mood to get ahead with business and defer the millennium until we win the war. And Knudsen had lived down the noisy build-up he had been given when he first came to town.

Bright Side of the Button

CONGRESSMAN Bennett of Missouri produced some fairly startling figures:

"The Army," said he, "has bought 50 items of underwear for every man now in the service and seven barracks bags to keep them in—"

Bennett's figures were pretty horrifying and that's a fact. Fifteen pairs of pants per man and ten pairs of shoes. And just when there were editorial evidences that these extravagances were to be resented the Japs bombed Pearl Harbor and every one recalled that one part of the Army's business is to be ready for anything and the wrinkles faded out of the congressional

brows. The conclusion seems to be that either Bennett or the Japs did a bad job of timing.

Which Recalls to Mind—

ABSOLUTELY trustworthy information from the Army is that, now that the men have most of the guns and tanks and things they need, the morale of the men runs something over boiling point:

"That sham battling in the swamp was stiff going for any man's army. The men came out tough and hard and ready."

Same report is that some of the officer material was "pretty scabby." The politicians, the officers who cannot take it, or do not want to, are being weeded out. Some of the best officer material is being found in the ranks. Some outfits are ready to go right now. Another six months is needed for some regiments. But the new-made officers will cut the time needed to condition the men now coming in by a half.

To Cite an Instance—

THE dry cleaning industry suddenly discovered that it was endangered by a flood of clothes that needed cleaning and for the cleaning of which it was to be rationed out of the things essential. The routine in such cases was:

- A, to send representatives to Washington;
- B, for the representatives to be ignored;
- C, for the representatives to go home after the seats of their pants get hot.

In this case the industry had a meeting in New York, got a hearing from an O.P.M. man, and will likely get part of what it must have. And O.P.M. liked the plan so well that it is to be followed in other industries.

A Long Shot Galloped Home

ON the Saturday preceding that vote in the House by which the Smith bill was sent to the Senate, bristling with teeth and with its hackle up, the C.I.O. goon squads shook the fear of destruction in the face of every doubtful congressman. Some of them may have resented this threat. More of them swallowed the insult with a gulp. But on Monday morning the desk of every member of Congress was covered with letters demanding that some law be enacted putting the labor racketeers in their place. There was no opposition to organized labor, so far as reported, but a wave of fury at the men who had tried to blackmail the country swept the House into line. On Saturday a nickel that the Smith bill would pass would have won the better \$40.



Here's the sad ending.

Labor chiefs say, as soon as the country's blood pressure returns to normal, the Smith bill will be torn out of the book.

Reports from the Palaces

REPORTS from the City of Mexico are that white-tie society there is eagerly awaiting the arrival of Ambassador Messersmith. Predecessor Daniels was admirable, elevating and lovable, but he was also dry. The cocktail parties given by the Messersmiths in Havana did much to bind the bonds of friendship tighter. It is not altogether a coincidence that about the time Messersmith went to Havana the Cuba Libre was invented. These statements should not be read

with the wrong accent. The meaning is simply that the friendly Messersmiths get along with their Latin-American friends. This corner would not go too far out on the limb of prophecy, but it is a fairly safe assumption that no more will be heard of those secret Japanese landing fields on the Mexican Pacific coast. There is no doubt that some kind of hostile hornswoggling was going on in isolated inlets. Mexican troops have been moved in to clean out the Japanese.

Thumb-down the Hysterics

THOSE who have witnessed the performance of other nations in the first days of war are amazed at the calm with which Americans settled down to their task. Britain had a plague of ex-colonels who suffered from a horrid activity and tried to get their hands into everything until they got their paddies well slapped. We have not as yet been bothered by amateur warlords and, the popular gift of humor being what it is, the chances are we will not be. At the time of writing only a few reports have come in of the shooting and clubbing of innocent citizens who had not yet learned the new rules.

Here's A Bright Spot

THE American Trucking Association has urged on Congress that the state size, weight and barrier laws have reduced the truck potential to 40 per cent. The Senate Interstate Commerce Committee is considering a bill which would empower the I.C.C. to get rid of the state line bottlenecks.

Neighbors on One Way Streets

CONGRESSIONAL examination of the executive "agreement" with Canada on the St. Lawrence project revealed that Canada is not bound to complete her share until after the war, is not required to accept an equal division of the water, and is not pledged to get our consent before cutting off power exported to the United States. Prospect for congressional acceptance of the "agreement" very dim. Congressional leaders are not pleased with one phase of the oil agreement the State Department negotiated with Mexico. On examination it appears that, if Mexico does not agree on the amount of the compensation to be given the U.S. oil companies for confiscated properties, she is to be given back the \$9,000,000 which has been paid in as a pledge of good faith. Story ends.



These Signals Were Crossed

THE Supreme Court seems to have thrown a mouse in the milk bucket in its decision that states may impose taxes on national defense contracts, on appeal from Alabama. The Justice Department estimates that such taxes may cost the Government \$100,000,000 a year. The decision strengthened the hands of the members of the Foreign Relations Committee of the Senate in their opposition to the treaty by which it was proposed to exempt from federal, state and local taxes much or all of the British property in the U.S. A goose and gander incident.

Bundles for Business Men

NOT much in the way of checking inflation is hoped for by the price control bill, when passed. . . . Com-

merce Department plus O.P.M. is urging standardization and simplification of manufactured goods and packages. . . . The newly formalized toothpick is an illustration. . . . Gossips say that, if the lobby-graft situation is really gone into by the Truman committee, big names and bad smells will be discovered. Bombproofs are being hastily thrown up. . . . I.C.C. will grant higher freight and truck rates to help railroads and employers meet wage boost. . . . Plan is to spend \$50 000,000,000 on defense in 1942. . . . U.S. bought 8,586 tons of quinine from Netherlands Indies in 1941. That's at the rate of ten pounds per soldier. . . . Army bought \$1,000,000 worth of blood plasma in five days.

Canterbury, Conn., is Unfair

IF we get a censor all stories about Canterbury, Conn., will be blacked out. For ten years Canterbury lived within its income. This year it took its accumulated surplus for expenses and for one year its 1,000 residents will pay no town tax. The fact was brought to the attention of Sen. Harry Byrd, of Virginia, when his committee on economy was grumpily considering our national outgo. It brought him no happiness. The committee has discovered ways by which \$2,000,000,000, more or less, could be saved each year.

"We also know," said one of the members, "that we could reach the moon in a rocket if we had the rocket."

When the Byrd committee was at the height of its pondering, the W.P.A. announced a \$5,000,000 project to train leaders in recreational activities. This department hopes the W.P.A. can see its way to improving the standards of bar-room singing.

Taking 'Em to the Cleaners

ONE of the items on S.E.C.'s request for \$5,380,000 for 1942's expenses is for the purchase of rubber gloves. The utilities can give the explanation for that one. . . . House members heat up at suggestion that tax be taken out of the worker's weekly envelope. Election is coming on. . . . First year's cost of the proposed boost in veterans' pensions estimated at \$11,620,000. By 1962 the boost will eat up \$520,000,000 a year. Pension bills have a way of going through. . . . Argentina paid its subsidized farmers 36 cents a bushel for last year's corn. It is being sold as fuel for three cents. . . . The Florida ship canal is being promoted as a short route for the oil tankers. Secretary Ickes wants to lay a Florida pipe line and take their business away from the tankers. . . . The W.P.A. now eats \$1,500,000,000 a year, the Agricultural Adjustment \$1,200,000,000, Social Security \$600,000,000 and P.W.A. about \$200,000,000 more. . . . So Congress saves \$4,000,000 by knocking down the jalopy use tax. . . . More than 31,000 persons are now engaged in the various phases of government press agency at an annual cost of \$27,000,000. And there is still a law on the books prohibiting the employment of press agents by the Government!



Herbert Corey

NO BUSINESS *Can Escape* CHANGE

Business' first aim now is new and better ways of arming, but soon consumers will be first again

1 • SYNTHETIC production of pine oil from gum turpentine has been developed. The new product is suitable for most of the uses for which pine oil is employed and may relieve pressure on sources of natural pine oil.

2 • A TREATMENT for sole leather in shoes is said to increase wear 50 per cent or more, to make them resistant to water without shutting the pores to stop the leather breathing. Increased flexibility with a dry, non-aging finish results.

3 • DIES for embossing designs and lettering into name plates and tags of soft brass, terneplate and other metals are now made of half hard engraved brass. They are much cheaper than steel dies. They may be assembled for use in any punch press.

4 • FOR high-bay lighting in industrial plants there is a new concentrating floodlight bulb. Sizes up to 1,500 watts are available. The inside of the bulb is a polished silver reflector that is of course dirt proof.

5 • A COATING which withstands unusually high temperatures has been developed for protection of metals, such as baskets, subject to deterioration during repeated heat-treating operations, to protect metals during heat treatment against decarburization and scaling, for selective carburization and selective nitriding. It is easily applied to any surface to be protected.

6 • A NEW motor control system provides simple, stepless control of direct-current motors from alternating current lines wherever a wide speed range is needed. It has a single dial control for the complete speed range of the motor. The unit includes transformer and thyatron tube panel.

7 • A NOVEL type pump utilizes a flexible rubber tube compressed by an eccentric ring. It has no metal touching the gas or liquid pumped.

8 • A NEW product prevents rust and keeps water from metal tanks or pipes clear. It is a clear, tasteless, harmless liquid added in minute quantities. It is suitable to keep clear drinking water in metal tanks, to protect hot water heating systems, and many other uses. It also protects tanks and, in stronger solutions, clears up old rust.

9 • LETTERS and figures of stamps are now available of sufficient hardness to mark steels as hard as Brinell 380. They are designed to mark stainless steel, forged parts, half hard metals.

10 • A PLASTIC protective coating for metals may be used purely as a priming coat or protection against

rust and corrosion. It may be sprayed, brushed, or dipped, is very light weight and dries to give a hard, non-porous, yet flexible surface.

11 • A NEW cleaner for speedy tarnish-free cleaning of aluminum alloys without causing corrosion even after prolonged exposure has been developed. It causes no etching or streaking.

12 • A BELT grinder is now made which may be used with either dry or wet abrasive belts. The flat backing plate is 40 square inches and the table is adjustable to several positions. It is recommended for wood, plastics, glass, ceramics and other materials.

13 • A RUBBER attachment is now made which will hold a cradle-type phone on the shoulder next to the ear and at a convenient talking position. It is intended to leave both hands free while talking.

14 • VIBRATION proof fastenings for removable plates to cover hand holes, inspection openings and the like are now available with a nut that can be riveted in place inside the structure. Bolts, inserted from the outside, pass through the plate, the structure, then enter the nuts. Repeated use of the nuts does not affect their resistance to vibration.

15 • A MILDEW-PROOFING process which is available for general use uses morpholine with inorganic salts. It is said to be particularly effective and not difficult to apply.

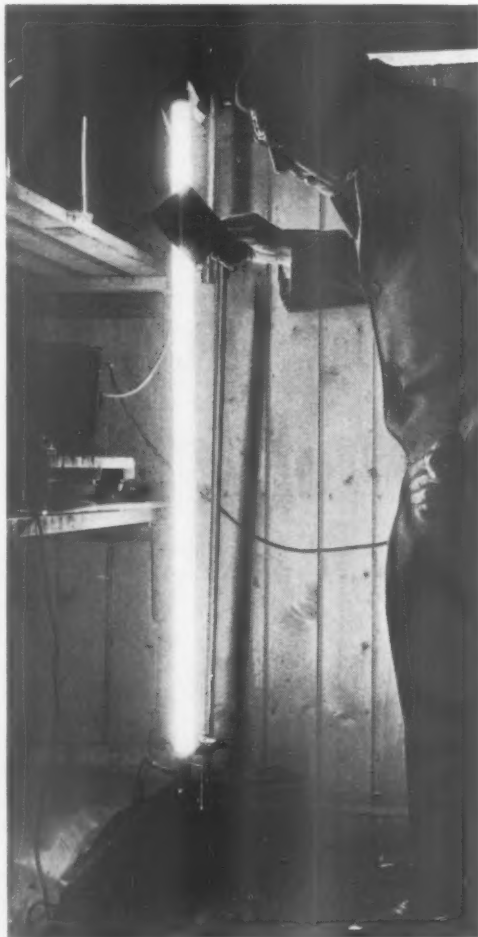
16 • A NEW low priced heating system regulator operates in accordance with outside temperature, cutting in in the morning at varying times to have the building warm at a given time. Various adjustments are available including an automatic cut off when the outside temperature reaches 65 degrees.

17 • A NOVEL unit fitting inside a closet door in effect adds another closet or with drawers a small bureau.

18 • FOR pickles, olives, other tidbits there is a plastic three-tined fork with spear on the other end.

19 • HAIR curlers are now made of a light weight plastic to replace aluminum. They are unaffected by water, acids, alkalies, or alcohol. They can be made transparent or in many colors. —W. L. HAMMER

Editor's Note—This material is gathered from the many sources to which NATION'S BUSINESS has access and from the flow of business news into our offices in Washington. Further information on any of these items can be had by writing us.



20 • A MERCURY vapor lamp of 3,000 watt size provides 40 lumens of light per watt. It's designed primarily for high-bay lighting in industrial plants where a high level of illumination is required.

Business Men's Organizations and the War Program

THE UNITED STATES IS AT WAR.

All of our energies and all of our economic strength must be concentrated upon support of our armed forces in meeting the attacks made upon the United States. We have undertaken to demonstrate to the world that we can, by keeping our essential freedoms, exert our full might.

To be most effective, our efforts must be coordinated, in order that each may have its proper place and its maximum power. In bringing about coordination, in maintaining it, and in giving all endeavors the full force of their inherent powers, business men's organizations have immediate opportunity and obligation to perform all of the services of leadership and assistance for which they are especially qualified and for which they are already prepared. One of the most essential functions in all war problems is advance planning for any emergency and for any condition that may arise in a community or area because of the factors to which it may become subject.

Chambers of commerce in their respective localities and trade and industrial associations in their respective fields of business will, in the months ahead, devote maximum effort to the completion of the tasks our war program places upon them.

As a blue-print and guide for such activity, this report lists functions which now engage many business organizations and which should be incorporated in whole or in part in every business organization program. The report is being distributed widely in order that the Presidents and Directors, the constituent members, and the staff of business organizations may review the work now under way, adapt it to local conditions, amplify it where necessary, accelerate all of it to maximum speed, and thus dedicate every ounce of energy to this imperative national effort.

Adequate Protection of Local Communities

Coordination of Activities with Government Agencies

It is highly important that business organizations coordinate their activities with those of government agencies concerned with internal defense. The function of the War Department in this field is delegated to the Commanding Officers in the four Defense Command areas—that is, the Northeastern Defense Command, the Southern Defense

ACTION!

Monday, December 8—Congress recognized a "state of war exists."

Tuesday—2,000 telegrams, letters and phone calls to the President of the United States Chamber of Commerce from individuals and organizations offering help, asking advice, information.

"How do we cooperate with federal and local agencies to maintain order?" "Can we help the Army and Navy in recruiting activities?" They offer their services in solving labor difficulties; to develop additional safety programs for workers. They offer to help on war financing, emergency housing, arranging military sites.

Wednesday-Thursday—meeting of the National Defense Council of the Chamber, a committee of business men, not an emergency committee but one which has been working on national defense policies since 1933.

Friday—the defense committee presents a special report to the Board of Directors of the U. S. Chamber of Commerce.

Here is a description of the completely coordinated defense program for business organizations in every community and for local, state and national trade associations. It covers not only a description of activities but gives names, addresses and telephone numbers of Army Field Officers and OPM Contract Distribution Headquarters.—THE EDITOR

Command, the Central Defense Command, and the Western Defense Command. The addresses of these offices are given in the appendix to this report. Chambers of commerce and trade and industrial associations should hold their services at the disposal of these agencies when requested.

The Office of Civilian Defense maintains nine regional offices throughout the country and works in close coordination with the various State Defense Councils. A list of these regional offices and State Councils is given in the appendix; business organizations should contact and cooperate with their own civilian defense councils, in connection with the various activities in this field.

The Federal Bureau of Investigation has 55 offices throughout the country, a list of which is given in the appendix. Particularly in cases of suspected sabotage, espionage, etc., business organizations should communicate immediately with these offices.

It is important to emphasize that, in the protection of property and of critical points in defense industries, communications, and other services, the responsibility rests, to the maximum extent practicable, upon first, local owners, second, local municipal government, and third, state government, in the order named, in order to free federal troops for other purposes.

In the field of Army operations, it is important that the War Department be the agency to determine the points most in need of the available defenses and that high pressure demands for protection everywhere be kept to a minimum.

Due to increased military requirements there have been

delays recently in transportation and communications, particularly telephone and telegraph communication; commercial organizations can help in developing local opinion that will accept these delays in good spirit.

With specific reference to some of the activities coming under the heading of local community protection the following deserve special emphasis:

Protection of Industrial Plants

INDUSTRIAL PLANTS working on war contracts are the special object of sabotage and espionage by enemy agents and, in some instances, attack by hostile forces. The Federal Bureau of Investigation has a confidential report entitled "Suggestions for Protection of Industrial Facilities," available to manufacturers who wish the advice of that agency in defending plants against sabotage. Further, the FBI has made available the services of its agents in surveying plants in order to determine the extent to which adequate protection has already been established and to make further recommendations for improvement of protection.

The Office of Civilian Defense has also issued a pamphlet entitled "Protection of Industrial Plants and Public Buildings" which deals with various phases of plant and building protection, including protective organization, fire services, police services, medical services and maintenance services, and gives a general plan for air raid protection.

Cooperation between plants and city officials and between individual plants will contribute to the flexibility and effectiveness of plant protection. Business men's organizations should work for the removal of legislative obstacles to the employment of armed guards and detectives to protect plants and other buildings against hostile attack, sabotage and espionage.

Protection of Strategic Centers

IN EVERY COMMUNITY there are strategic centers vital to the normal functioning of the community. These include water systems, electric power and light plants and systems, gas plants and systems, bridges, railroads, telephone systems, subways and tunnels, harbor facilities, etc. Practically every chamber of commerce has a close over-all acquaintance with the location of these various strategic points, personal acquaintance with the owners and engineers, knowledge as to the availability of maps of the areas, etc. Some cities have worked out effective defense plans for emergencies, involving these strategic points. Chambers of commerce should make available to the appropriate officials of the Army and civilian defense organizations all necessary information to permit effective protection of such centers whenever emergencies occur.

The advice of the War Department as to points whose military importance demands protection is essential. In some communities chambers of commerce may find need for working for expanded state and local police forces for the operations indicated above.

Protection Against Air Raids

THE Office of Civilian Defense, with the aid of state and local agencies, has been engaged for some time in the establishment of networks of air raid wardens and other necessary assistance in the handling of civilian population in the case of air raids. This involves a knowledge of the population and the geographical subdivision of the various cities, in which work real estate and other maps available to chambers of commerce with related information is highly important. Air raid protection also involves the utilization of existing facilities as air raid shelters, in the location of which chambers of commerce can be helpful. Among useful documents distributed by the Office of Civilian Defense in this connection are "Civilian Air Raid Warning System," prepared by the War Department,

"Civilian Protection," and the "Handbook for Air Raid Wardens," prepared by the Office of Civilian Defense, and "Protective Construction," prepared under the direction of the Chief of Engineers of the Army. The Office of Civilian Defense will furnish further publications as issued.

Effective protection against air raids also involves plans, organization and training for blackouts, which necessitates cooperation on the part of business establishments, drivers of motor cars, home owners, apartment dwellers, and others. The widespread knowledge a chamber of commerce has of its local community can be of great importance in this connection. The Office of Civilian Defense has published a booklet, "Blackouts," containing valuable information, prepared by the War Department with the assistance and advice of other federal agencies.

The extent to which air protection plans should be actually executed depends upon the degree of exposure to attack to which particular localities are subject.

Evacuation

PLANS for civilian defense include organization and established programs for the evacuation of community populations in the case of special emergencies. In this work the knowledge which chambers of commerce have of access roads to their cities, available housing facilities in adjacent territory, traffic conditions, etc., makes them of special value to any such evacuation program. These services of chambers of commerce should be placed at the disposal of Army officials and the civilian defense officials concerned with such programs.

Fire Protection

IN OTHER countries it has been found that the key to combating incendiary attack is prompt action by the individual, and the individual household and plant, after adequate training, in localizing and extinguishing fires.

Many chambers of commerce have participated in campaigns for the reduction of fire losses in their communities. This has given them a cooperative relationship to the local fire officials as well as a close acquaintance with all types of fire hazards in the community. This is important in all cases of emergency and is of special significance now because of increased fire hazards created by war production activities.

Transportation

TRAFFIC HAZARDS in many communities have increased due to heavy influx of industrial workers, personnel from the Armed Services and others. Troop movements and total or partial blackouts also add to traffic unsettlement. Efforts to reduce traffic hazards have long been part of the programs of chambers of commerce and of affected national associations; the experience thus gained can be brought to play effectively in the present emergency. To expedite movement of freight and passengers local organizations have done and will continue to do effective work in promoting more efficient utilization of railroad cars and in arranging for staggering of hours in industries and businesses.

Chambers of commerce and local trade and industrial groups should consult with civilian defense officials as to the need for minimum automobile movements during periods of emergency, reduction of the volume of traffic by joint use of motor vehicles by civilians, and other measures of safety and conservation.

Emergency Medical and Relief Services

PART OF civilian defense activity is the taking care of casualties. This involves a knowledge of available hospitals and clinics, and a registering of doctors and nurses available in emergency. Public health officials, the Red Cross,

air raid wardens and others share responsibilities in this area. The facilities of chambers of commerce can contribute to this important service.

Maintenance of Order

Cooperation with Federal and Local Agencies

IN TIME OF WAR constant vigilance must be maintained to detect plans of enemy agents or their sympathizers to create local disturbances that would obstruct the war program. Taking full precaution against such dangers is part of the duties of federal and local agencies charged with the maintenance of law and order. Chamber of commerce activity in directing to the attention of these agencies any information helpful in combating such subversive plans is important. This is particularly the case in states where the absence of the National Guard may have left the state without its full complement of protective forces; in such cases chamber of commerce cooperation with the states in the establishment of official "State Guard" and State Police organizations should be assured. In communities adjacent to camps and other military establishments assistance to the Commanding Officers in maintaining local order and healthful local surroundings should be part of the chamber of commerce program. A list of Army Corps areas is given in the appendix.

Maintenance of Calm

IT IS essential to effective military operation and to local order that calm be maintained in local communities during emergencies. The nation-wide network of civilian defense agencies and officials has this as a main objective and chambers of commerce and trade and industrial associations should cooperate with them.

Personnel of the Armed Forces

Recruiting

IN MANY communities chambers of commerce have worked and will continue to work hand in hand with the Army and the Navy in their recruiting activities.

Training of Replacements

CHAMBERS OF COMMERCE and trade and industrial associations can contribute to the war program by undertaking at once cooperative activities with the War Department in order to train men to replace the some 7,500 Reserve Officers in the War Department reserve pool who are now deferred because of occupational qualifications.

Commissions

BUSINESS men's organizations can be helpful in reducing the present heavy volume of applications for commissions in the Army. These requests come largely from ex-officers of the last war. A recent survey indicates that only a small percentage of such men are in all respects suitable for military service now. Those qualified will be called and utilized in an orderly manner as required.

Morale

COOPERATION with the United Service Organizations in their plans for helping promote morale in the Armed forces, through provision of recreational centers and the various services thus made available to soldiers and sailors, should be expanded.

Selective Service System

CHAMBERS OF COMMERCE and trade and industrial associations should continue to give their wholehearted

support to the Selective Service System and encourage continuance of the highest standards of administration on the part of local Selective Service Boards. In order to improve Army morale, local business organizations should use their influence to reduce, by such measures as are practical, any unwarranted exemptions from selective service on the basis of necessity in industry. In cooperation with existing state and local agencies, business men's organizations should be prepared to assist in every way possible in the reemployment of selectees and in the locating of employment opportunities for unemployed selectees.

Expediting Military Production

"Round-The-Clock" Production

TWENTY-FOUR-HOUR, seven-day-week production schedules on Army, Navy and Maritime Commission production are now called for by our government. Organized effort by the industries in affected trade and industrial associations is important, as is also joint local activity in putting such schedules into effect, recognizing many of the difficulties involved in such procedure. Every industrial plant and productive enterprise should attain its maximum output and every man should contribute his maximum to such production. Existing law and contracts should be modified promptly in order to make possible this full measure of war production.

Industry Committees

TRADE and industrial associations have cooperated with the Office of Production Management and other government groups in setting up liaison "industry committees." It is of highest importance that such work be maintained and expanded.

Labor Training

DURING the past two years a great deal of progress has been made in the training of men and women for effective participation in the varied industrial operations associated with the production of war materials. The accelerated demands growing out of the present war will increase the call for trained workers, including women; industrial associations through "in-industry" training programs, and chambers of commerce through local training programs, can contribute greatly to the successful carrying out of these educational schedules.

Solving Labor Difficulties

THE SURVIVAL of this nation demands that labor and management settle their present and future difficulties promptly and without interference to production. Legislation to produce this result should be supported by all chambers of commerce and trade and industrial associations.

All business men's organizations should back up management in their efforts to remove from their working forces men and women disloyal to the United States.

Safety of Workers

THROUGH their committees on industrial safety, trade and industrial associations and chambers of commerce should work to eliminate all industrial hazards in order to conserve experienced labor. Many of these hazards are created by defense operations engaged in by workers with a limited amount of training on new processes. Further, community safety programs and plant protection should be established and their existence be made known in order

to eliminate anxiety on the part of workers during raids or other emergencies.

Priorities and Allocations

THE WAR will add to the burden upon the production program of munitions and implements of war. It will bring new problems with respect to priorities and allocations. Chambers of commerce and trade and industrial associations should maintain close contact with the Priorities Field Offices of the Office of Production Management, a list of which is given in the appendix. In addition to a general knowledge of the priority procedure, the staff of trade associations and chambers of commerce should keep constantly in touch with changes in the priorities organization and personnel. Measures to insure that experts in specific branches of industry head respective priorities divisions and committees are essential.

The Smaller Manufacturer

WHILE many smaller manufacturers are already engaged in production for the war effort, the impending shortages of materials make it imperative that prime contracts and subcontracts be made available to smaller plants in every way possible. The Division of Contract Distribution in the Office of Production Management is charged with this task and is daily increasing the number of its offices throughout the United States. A list of these offices is given in the appendix. A list is also given of the Army Field offices and the Navy Purchasing offices with which contact should be maintained. Chambers of commerce should make known to these Defense Contract Distribution Offices the facilities of their smaller manufacturers for every type of production that can be adapted to Army, Navy, Maritime Commission and other war programs. Local commercial organizations can often organize local associations through which manufacturers may pool their equipment to undertake defense contracts.

Military Sites

CHAMBERS OF COMMERCE and trade and industrial associations should continue to render all assistance in procurement of sites for camps and depots and should use their influence to eliminate any unwarranted opposition to sites considered desirable by the War Department. It is also important that local communities and local organizations examine carefully into all phases of the establishment of military installations in their areas, in order that promises and commitments made as an inducement to securing such sites may not be beyond the power of the local communities to carry out.

Essential Materials

Production

ASSOCIATIONS of producers of various materials that enter into war production can contribute to the war program by expediting and increasing in every way the output of essential items. In this work it is important that they maintain constant contact with the Materials Division of the Office of Production Management and with other government agencies concerned.

Conservation

IN THE Office of Production Management there is the Bureau of Industrial Conservation, particularly concerned with the problem of making the highest possible use of

all available materials needed in the war production program. The Bureau can be helped greatly by trade associations whose members produce or use the materials in question.

Substitutes

SCARCITY of materials essential to military output can be relieved by the development and use of substitutes. The Bureau of Industrial Conservation is engaged in this program and trade associations concerned should consult the Bureau. Interchange of information and processes by interested associations can help to promote the development of acceptable substitutes.

Warehousing and Stockpiling

DURING the past two years our government has engaged in an extensive program of stockpiling of essential materials. In the purchase, distribution and warehousing of these items, trade and industrial associations and chambers of commerce have been helpful. Continuance of this activity is highly important in the war effort.

Waste Materials

THE Bureau of Industrial Conservation is engaged in the promotion of year-round programs for the collection of essential waste materials. It is the objective of that Bureau to have this collection made through existing private agencies rather than through government agencies as was undertaken earlier in the collection of aluminum.

It is important that trade and industrial associations and chambers of commerce emphasize the importance of conserving these materials and encourage their collection.

War Financing

THE cooperation of all private and government agencies in the sale of defense bonds, stamps, etc., is highly essential. In this undertaking associations in the financial field and other associations reaching wide groups of citizens can render patriotic service.

Emergency Housing

THE cooperative effort in the provision of needed housing for military and naval personnel and workers on war materials should be continued by the many trade and industrial associations and chambers of commerce already undertaking this type of work. As the need for such housing expands other groups should be ready to render all possible service. To conserve labor and materials, to utilize most effectively existing housing facilities, to assure that building that is needed for purely temporary purposes shall be temporary in character, to eliminate the necessity of duplicating transportation facilities and to avoid "ghost towns" after the war, chambers of commerce and trade and other industrial associations should support all measures to restrict this activity to proved emergency needs.

★ ★ ★ ★ ★

The Committee on National Defense of the Chamber of Commerce of the United States will be glad to be of all possible assistance to government or private organizations not only in promoting the objectives set forth in this report but also in full furtherance of the nation's war program.

COMMITTEE ON NATIONAL DEFENSE
CHAMBER OF COMMERCE OF THE UNITED STATES
L. WARD BANNISTER, *Acting Chairman*

Regional Headquarters of Office of Civilian Defense

First Civilian Defense Region
101 Milk Street, *Boston*, Massachusetts
Second Civilian Defense Region
111 8th Avenue, Port Authority Building,
New York, N. Y.
Third Civilian Defense Region
Enoch Pratt Library, 400 Cathedral
Street, *Baltimore*, Maryland

Fourth Civilian Defense Region
150 Hurt Building, *Atlanta*, Georgia
Fifth Civilian Defense Region
427 Cleveland Avenue, *Columbus*, Ohio
Sixth Civilian Defense Region
120 South LaSalle Street, *Chicago*, Illinois
Seventh Civilian Defense Region
620 World Herald Building, 15th and

Farnham Streets, *Omaha*, Nebraska
Eighth Civilian Defense Region
Majestic Building, *San Antonio*, Texas
Ninth Civilian Defense Region
233 Sansome Street, *San Francisco*, Cal-
ifornia

State Defense Councils or State Emergency Defense Agencies

ALABAMA: Alabama State Defense Coun-
cil, 300 Dexter Avenue, *Montgomery*
ARIZONA: Arizona Civilian Defense Co-
ordinating Council, State House, *Phoenix*
ARKANSAS: Defense Council of Arkansas,
Room 336, State Capitol Building, *Little
Rock*
CALIFORNIA: California State Council
of Defense, 2121 Allston Way, *Berkeley*
California State Council of Defense,
State House, *Sacramento*
COLORADO: Colorado Council of Defense,
503 Gas & Electric Building, *Denver*
CONNECTICUT: Connecticut Defense
Council, Room 302, State Armory, Broad
Street, *Hartford*
DELAWARE: Delaware State Council for
Defense, 400 Mullin Building, *Wilmington*
DISTRICT OF COLUMBIA: District of
Columbia Council of Defense, District
Building, *Washington*
FLORIDA: State Defense Council of Flor-
ida, Rooms 225-227 City Office Building,
Tallahassee
GEORGIA: Georgia Council for National
Defense, 323 State Highway Building,
Atlanta
IDAHO: Idaho Civilian Defense, State
Capitol, *Boise*
ILLINOIS: Illinois State Council of De-
fense, Suite 2100, 120 South LaSalle
Street, *Chicago*
INDIANA: State Defense Council, 616
Board of Trade Building, 143 North
Meridian Street, *Indianapolis*
IOWA: Iowa Industrial and Defense Com-
mission, 505 Crocker Building, *Des
Moines*
KANSAS: Kansas Council of Defense,
State House, *Topeka*
KENTUCKY: Kentucky Civil Defense
Commission, *Frankfort*
LOUISIANA: National Defense Council of

Louisiana, State Capitol, *Baton Rouge*
MAINE: Maine Civilian Defense Council,
State House, *Augusta*
MARYLAND: Maryland Council of De-
fense, 606-7 Union Trust Building, *Balti-
more*
MASSACHUSETTS: Massachusetts Com-
mittee on Public Safety, 18 Tremont
Street, *Boston*
MICHIGAN: Michigan Council of Defense,
609 Capitol Savings & Loan Building,
Lansing
MINNESOTA: Minnesota State Defense
Council, Room 12, State Capitol, *St. Paul*
MISSISSIPPI: Mississippi Civilian De-
fense Council, Post Office Box 958, *Jack-
son*
MISSOURI: Missouri State Defense Coun-
cil, State Office Building, *Jefferson City*
MONTANA: Montana Preparedness and
Advisory Commission, Capitol Building,
Helena
NEBRASKA: Nebraska Advisory Defense
Committee, State House, *Lincoln*
NEVADA: Nevada State Council of De-
fense, *Carson City*
NEW HAMPSHIRE: New Hampshire
State Council of Defense, *Concord*
NEW JERSEY: New Jersey Defense
Council, Room 1406, Trenton Trust Build-
ing, *Trenton*
NEW MEXICO: New Mexico State Coun-
cil of National Defense, Post Office Box
1018, *Santa Fe*
NEW YORK: State Council of Defense,
Capitol, *Albany*
State Council of Defense, State Office
Building, 80 Centre Street, *New York*
New York City Defense Council, 60
Broadway, *New York*
NORTH CAROLINA: State Council for
National Defense, Post Office Box 907,
Raleigh
NORTH DAKOTA: North Dakota Council

of Defense, State House, *Bismarck*
OHIO: Ohio State Council of Defense, 1005
State Office Building, 65 South Front
Street, *Columbus*
OKLAHOMA: State Defense Committee,
Post Office Box 3057, 417 State Capitol
Building, *Oklahoma City*
OREGON: Oregon State Defense Council,
412 State Office Building, *Salem*
PENNSYLVANIA: State Council of De-
fense, Room 300, State Capitol, *Harris-
burg*
RHODE ISLAND: State Council of De-
fense, Room 203, State House, *Providence*
SOUTH CAROLINA: South Carolina
Council for National Defense, 102 Wade
Hampton Office Building, *Columbia*
SOUTH DAKOTA: South Dakota Council
of Defense, *Rapid City*
TENNESSEE: Advisory Committee on
Preparedness, Adjutant General's Office,
Nashville
TEXAS: National Defense Committee for
Texas, *Austin*
UTAH: Utah State Defense Council, 207
South Main Street, *Salt Lake City*
VERMONT: Vermont Council of Safety,
Post Office Box 191, *Rutland*
VIRGINIA: Virginia Defense Council,
State Capitol Building, *Richmond*
WASHINGTON: Washington State De-
fense Council, Capitol Building, *Olympia*
State Emergency Commission for Na-
tional Defense, Camp Murray, *Fort
Lewis*
WEST VIRGINIA: State Council of De-
fense, Adjutant General's Department,
Charleston
WISCONSIN: The Wisconsin Council of
Defense, 110 East Wisconsin Avenue,
Milwaukee
WYOMING: Wyoming State Defense
Council, Adjutant General's Office, *Chey-
enne*

Field Offices of Federal Bureau of Investigation

CITY	TELEPHONE NUMBER	BUILDING ADDRESS	CITY	TELEPHONE NUMBER	BUILDING ADDRESS
Albany, N. Y.	5-4595	707 National Savings Bank	Honolulu, Hawaii	4621	206 Dillingham
Atlanta, Ga.	WALNUT 3605	501 Healey	Houston, Tex.	CAPITOL 9717	2706 Gulf
Baltimore, Md.	PLAZA 6776	800 Court Square	Huntington, W. Va.	8928	700 West Virginia
Birmingham, Ala.	4-1877	320 Federal	Indianapolis, Ind.	MARKET 6415	323 Federal
Boston, Mass.	LIBERTY 4080	10 Post Office Square, Room 1016	Jackson, Miss.	3-5221	700 Mississippi Tower
Buffalo, N. Y.	CLEVELAND 2030	400 U. S. Court House	Juneau, Alaska	618	515 Federal and Terri- torial
Butte, Mont.	2-2304	302 Federal	Kansas City, Mo.	VICTOR 3113	707 U. S. Court House
Charlotte, N. C.	3-4127	914 Johnston	Knoxville, Tenn.	4-2721	407 Hamilton National Bank
Chicago, Ill.	RANDOLPH 6226	1900 Bankers'	Little Rock, Ark.	2-3158	445 Federal
Cincinnati, Ohio	CHERRY 7127	637 U. S. Post Office & Court House	Los Angeles, Calif.	MADISON 7241	900 Security
Cleveland, Ohio	PROSPECT 2456	1448 Standard	Louisville, Ky.	WABASH 2133	633 Federal
Dallas, Tex.	CENTRAL 9086	1200 Tower Petroleum	Memphis, Tenn.	8-4236	2401 Sterick
Denver, Colo.	MAIN 4335	518 Railway Exchange	Miami, Fla.	3-5558	1300 Biscayne
Des Moines, Iowa	3-8618	739 Insurance Ex- change	Milwaukee, Wisc.	DALY 3431	735 U. S. P. O. Customs & Court House
Detroit, Mich.	CADILLAC 2832	911 Federal	Newark, N. J.	MARKET 2-5613	1836 Raymond-Com- merce
El Paso, Tex.	MAIN 1711	202 U. S. Court House	New Haven, Conn.	7-1217	510 The Trust Compa- ny
Grand Rapids, Mich.	6-5337	715 Grand Rapids Na- tional Bank	New Orleans, La.	MAGNOLIA 7643	1308 Masonic Temple

CITY	TELEPHONE NUMBER	BUILDING ADDRESS	CITY	TELEPHONE NUMBER	BUILDING ADDRESS
New York, N. Y.	RECTOR 2-3520	607 U. S. Court House, Feley Square	Saint Paul, Minn.	GARFIELD 7509	404 New York
Oklahoma City, Okla.	2-8186	940 First National	Salt Lake City, Utah	4-4338	301 Continental Bank
Omaha, Nebr.	ATLANTIC 8644	629 First National Bank	San Antonio, Tex.	GARFIELD 4216	478 Federal
Philadelphia, Pa.	WALNUT 0555	4058 U. S. Court House	San Diego, Calif.	MAIN 3044	728 San Diego Trust & Savings Bank
Phoenix, Ariz.	4-5766	307 W. C. Ellis	San Francisco, Calif.	YUKON 2354	One Eleven Sutter, Room 1729
Pittsburgh, Pa.	GRANT 2000	620 New Federal	San Juan, Puerto Rico	1971	504 Banco Popular
Portland, Ore.	BROADWAY 0469	411 U. S. Court House	Savannah, Ga.	3-3054	305 Realty
Providence, R. I.	DEXTER 1991	510 Industrial Trust Company	Seattle, Wash.	MAIN 0460	508 U. S. Court House
Richmond, Va.	7-2631	601 Richmond Trust	Sioux Falls, S. Dak.	2885	400 Northwest Security National Bank
Saint Louis, Mo.	CENTRAL 4115	423 U. S. Court House & Custom House	Springfield, Ill.	2-9675	1107 Illinois
			Washington, D. C.	REPUBLIC 5226	1437 K Street, N. W.

Field Service Offices of Division of Priorities, OPM

(Revised to December 9, 1941)

Atlanta, Ga.	150 Hurt Building	Los Angeles, Calif.	1151 South Broadway
Baltimore, Md.	1054 Baltimore Trust Building	Louisville, Ky.	200 Todd Building
Birmingham, Ala.	302-306 Phoenix Building	Memphis, Tenn.	2112-2113 Sterick Building
Boston, Mass.	19 Congress Street	Milwaukee, Wisc.	1st Wisc. National Bank Building
Buffalo, N. Y.	212 M & T Bank Building	Minneapolis, Minn.	1320 Rand Tower Building
Charlotte, N. C.	16th Floor, Liberty Life Building	Nashville, Tenn.	1013 Stahlman Building
Chicago, Ill.	20 North Wacker Drive	New Orleans, La.	422 Canal Building
Cincinnati, Ohio	34 East Fourth Street	New York, N. Y.	25 Broad Street
Cleveland, Ohio	East 6th St. & Superior Ave.	Oklahoma City, Okla.	414 to 416 Key Building
Dallas, Tex.	4th Floor, Fidelity Building	Omaha, Nebr.	512 Grain Exchange Building
Dayton, Ohio	819 Third National Bank Building	Philadelphia, Pa.	925 Chestnut Street
Denver, Colo.	521 U. S. National Bank Building	Pittsburgh, Pa.	Grant Street and Ogle Way
Detroit, Mich.	7310 Woodward Avenue	Portland, Ore.	806 Bedell Building
El Paso, Tex.	233 El Paso National Bank Building	Richmond, Va.	10 South 5th Street
Hartford, Conn.	Phoenix Bank Building	St. Louis, Mo.	411 Locust Street
Helena, Mont.	Federal Reserve Bank Building	Salt Lake City, Utah	Utah Oil Building
Houston, Tex.	Federal Reserve Bank Building	San Antonio, Tex.	1116 South Texas Bank Building
Indianapolis, Ind.	Circle Tower	San Francisco, Calif.	400 Sansome Street
Jacksonville, Fla.	530 Lynch Building	Seattle, Wash.	960 Stuart Building
Kansas City, Mo.	1600 Federal Reserve Bank Building	Tampa, Fla.	901 Wallace South Building
Knoxville, Tenn.	2nd Floor, Goode Building	Tulsa, Okla.	416 Kennedy Building
Little Rock, Ark.	Rector Office Building		

Field Offices of Division of Contract Distribution, OPM

(Revised to December 5, 1941)

ALABAMA:	Birmingham*	301-305 Phoenix Bldg., 1706 2nd Ave. N.	MASSACHUSETTS:	Boston*	Federal Reserve Bank Bldg., 30 Pearl St.
ARIZONA:	Phoenix*	406 Security Bldg.		Fall River	27 South Main St.
ARKANSAS:	Little Rock*	304 Rector Bldg., 3rd & Spring Sts.		Springfield	95 State Street
CALIFORNIA:	San Francisco	Furniture Mart, 1355 Market Street		Worcester	State Mutual Building, 340 Main St.
COLORADO:	Los Angeles	1031 S. Broadway	MICHIGAN:	Detroit*	Federal Reserve Bank Bldg., 160 Fort St., W.
	Denver*	U. S. Natl. Bank Bldg., 817 17th St.	MINNESOTA:	Minneapolis*	Midland Bldg.
CONNECTICUT:	Hartford*	Phoenix Bank Bldg., 805 Main St.	MISSISSIPPI:	Jackson*	610 Tower Bldg.
	Bridgeport	Professional Bldg., Main St.	MISSOURI:	St. Louis*	Federal Reserve Bank Bldg., 411 Locust St.
DELAWARE:	Wilmington	314 Penn Building, French & Water Sts.		Kansas City	Federal Reserve Bank Bldg., Tenth St. & Grand Avenue
FLORIDA:	Jacksonville*	620 Hildebrandt Bldg.	MONTANA:	Helena*	Federal Reserve Bank Bldg., Park & Edward Sts.
	Miami	514 Congress St.	NEBRASKA:	Omaha*	501 Grain Exchange Building, 19th & Harney
	Tampa	901 Wallace S. Bldg.	NEVADA:	Reno*	Saviors Bldg.
GEORGIA:	Atlanta*	Suite 150, Hurt Bldg.	NEW HAMPSHIRE:	Manchester*	Amoskeag Industries Bldg., Stark St.
ILLINOIS:	Chicago*	Federal Reserve Bank Bldg., 230 South La Salle St.	NEW JERSEY:	Newark*	176 Sussex Avenue
	Springfield	407 Leland Office Bldg.	NEW YORK:	New York City*	Chanin Bldg., 122 East 42nd St.
INDIANA:	Indianapolis*	Circle Tower Bldg.		Albany	State Bank Bldg., 75 State St.
	Evansville	Koenig Bldg., Room 8, 112 North West 4th St.		Brooklyn	16 Court St.
IOWA:	Des Moines*	505 Crocker Bldg.		Buffalo	Mfrs. & Traders' Bank Bldg., Rm. 212
KANSAS:	Wichita*	517-518 Union National Bank Bldg.		Rochester	119 E. Main St., Commerce Bldg.
KENTUCKY:	Louisville*	200 Todd Bldg.		Syracuse	302 Starrett-Syracuse Bldg., 224 Harrison St.
LOUISIANA:	New Orleans*	Rm. 423, Canal Bldg.	NORTH CAROLINA:	Charlotte*	New Liberty Life Bldg.
	Shreveport	916 Gladders Lane Bldg., Milan & Marshall Sts.	OHIO:	Cleveland*	Union Commerce Bldg., E. 9th & Chester Ave.
MAINE:	Portland*	Rm. 501-502, 443 Congress St.			
MARYLAND:	Baltimore*	Federal Reserve Bank Bldg., Lexington & Calvert St.			

*—Main office in state.

Cincinnati	Room 804, Union Trust Bldg.
Columbus	305 Spahr Bldg., 50 E. Broad St.
Dayton	1021 Third National Bank Bldg., 32 North Main St.
Toledo	519 Spitzer Bldg.
Youngstown	1002 Union National Bank Bldg.
OKLAHOMA:	Oklahoma City* 540 Key Bldg.
OREGON:	Portland* 815 Bedell Bldg.
PENNSYLVANIA:	Philadelphia* Federal Reserve Bank Bldg., 925 Chestnut St.
	12-14 East 5th St.
Chester	Erie Trust Company Bldg.
Erie	Black Stone Bldg., 3rd and River Sts.
Harrisburg	655 Woolworth Bldg.
Lancaster	306-308 Norristown-Penn Trust Bldg., Main & Swede Sts.
Norristown	Federal Reserve Bank Bldg., Grant St. & Ogle Way
Pittsburgh	615 Penn St.
Reading	Room 717, First Nat'l Bank Bldg.
Scranton	528 Miners National Bank Bldg.
Wilkes-Barre	Manufacturers' Assn. Bldg., 25 N. Duke
York	

RHODE ISLAND:	Providence* 530 Industrial Trust Bldg.
SOUTH CAROLINA:	Columbia* Room 204-206 Manson Bldg., 1207 Taylor St.
TENNESSEE:	Memphis* 2112 Sterick Bldg.
	Chattanooga 909-910 James Bldg.
	Knoxville 202-204 Goode Bldg.
	Nashville 1014 Stahlman Bldg.
TEXAS:	Dallas* Fidelity Bldg.
	El Paso 222 El Paso Natl. Bldg.
	Houston Federal Reserve Bank Bldg., Texas Ave. & Caroline St.
	San Antonio 1100 South Texas Bank Bldg., Houston & Navarro St.
UTAH:	Salt Lake City* 432 Utah Oil Bldg., Cor. S. Temple & E. State Sts.
VERMONT:	Montpelier* 12 State St.
VIRGINIA:	Richmond* Johnson Publishing Bldg., Fifth & Cary Sts.
WASHINGTON:	Seattle* Nat'l Bank of Commerce Bldg.
	Spokane Rm. 629-630 Old Nat'l Bank Bldg.
WEST VIRGINIA:	Wheeling 1025 Main St., Hawley Bldg.
WISCONSIN:	Milwaukee* 1124 First Wisconsin Nat'l Bank Bldg.

*—Main office in state.

Directory of Army Field Offices

(Revised to December 9, 1941)

OFFICE OF THE UNDER SECRETARY OF WAR

Washington, D. C. Facilities Division, Room 6014, New War Department Bldg.

QUARTERMASTER CORPS

Washington, D. C. Requirements and Procurement Planning Branch, Room 4534, Railroad Retirement Bldg., 4th & C Sts., S.W.
 Atlanta, Ga. 607 Spring, N. W.
 Boston, Mass. Army Base
 New York, N. Y. 521 Fifth Ave.
 Chicago, Ill. 1819 W. Pershing Road
 Detroit, Mich. Fort Wayne (Motor Procurement)
 Jeffersonville, Ind. 10th St. & Meigs Ave.
 Philadelphia, Pa. 21st & Johnston Sts.
 Kansas City, Mo. Independence and Hardesty Aves.
 Fort Sam Houston, Tex. San Antonio General Depot
 San Francisco, Calif. Fort Mason

ORDNANCE DEPARTMENT

Washington, D. C. District Control Division, Room 3260, Social Security Bldg., 4th & D Sts., S. W.
 Birmingham, Ala. 700 Frank Nelson Bldg.
 Boston, Mass. Rooms 1501-1516, 140 Federal St.
 Chicago, Ill. 38 South Dearborn St.
 Cincinnati, Ohio The Enquirer Bldg.
 Cleveland, Ohio 1450 Terminal Tower Bldg.
 Detroit, Mich. 1832 National Bank Bldg.
 Los Angeles, Calif. 409 Chamber of Commerce Bldg.
 New York, N. Y. Room 1815, 80 Broadway
 Philadelphia, Pa. Room 1300, Mitten Bldg.
 Pittsburgh, Pa. 1202 Chamber of Commerce Bldg.
 Rochester, N. Y. 1238 Mercantile Bldg.
 St. Louis, Mo. 935 U. S. Custom & Courthouse Bldg.
 San Francisco, Calif. 402 Hotel Empire, Leavenworth & McAllister Sts.
 Springfield, Mass. 95 State St.

AIR CORPS

Washington, D. C. Statistical Section, Material Div., Room 4113, Munitions Bldg.
 Buffalo, N. Y. 1807 Elmwood Ave.

Detroit, Mich. Graham Paige Bldg., 8505 W. Warren Ave.
 New York, N. Y. Room 1216, 90 Church St.
 Santa Monica, Calif. 506 Santa Monica Blvd.

CORPS OF ENGINEERS

Washington, D. C. Supply Section, Room 2215, New War Department Bldg.
 Chicago, Ill. 1117 U. S. Post Office Bldg.
 Mobile, Ala. 533 U. S. Courthouse & Customhouse
 New York, N. Y. Room 342, 17 Battery Place
 Philadelphia, Pa. 900 U. S. Customhouse, 2d & Chestnut Sts.
 Pittsburgh, Pa. 1012 New Federal Bldg.
 San Francisco, Calif. Room 401, Customhouse

MEDICAL DEPARTMENT

Washington, D. C. Procurement Planning, Finance & Supply Div., Room 1749, Social Security Bldg., 4th & D Sts., S. W.
 Brooklyn, N. Y. New York Medical Depot, Kenyon Bldg., 1st Ave. & 57th St.
 Chicago, Ill. 1203 U. S. Post Office Bldg.
 St. Louis, Mo. Second & Arsenal Sts.
 San Francisco, Calif. Medical Section, San Francisco, General Depot, Fort Mason

SIGNAL CORPS

Washington, D. C. Procurement Planning, Supply Division, Room 4440, Munitions Bldg.
 Chicago, Ill. 1819 W. Pershing Road
 Philadelphia, Pa. Wissahickon Ave. & Abbottsford Road
 San Francisco, Calif. The Presidio

CHEMICAL WARFARE SERVICE

Washington, D. C. Procurement Div., Room 104, 23d & D Sts., N. W.
 Boston, Mass. Room 2004, Post Office Bldg.
 Chicago, Ill. Room 1506, 20 N. Wacker Drive Bldg.
 New York, N. Y. 292 Madison Ave.
 Pittsburgh, Pa. American Bank Bldg., 6th Ave. & Grant St.
 San Francisco, Calif. Room 201, 1355 Market St.

List of Naval Field Purchasing Offices

Apply to Any of the Following If You Wish to Have the Name of Your Concern Placed on Their Mailing List to Receive Proposals for Purchases Made LOCALLY At That Respective Point.*

Supply Officer, Navy Yard.....	Portsmouth, N. H.	Supply Officer, Naval Proving Ground.....	Dahlgren, Va.
Supply Officer, Navy Yard.....	Boston, Mass.	Supply Officer, Naval Academy.....	Annapolis, Md.
Supply Officer, Navy Yard.....	Philadelphia, Pa.	Supply Officer, Naval Mine Depot.....	Yorktown, Va.
Supply Officer, Navy Yard.....	Washington, D. C.	Supply Officer, Naval Station.....	Key West, Fla.
Supply Officer, Norfolk Navy Yard.....	Portsmouth, Va.	Supply Officer, Naval Training Station.....	Great Lakes, Ill.
Supply Officer, Navy Yard.....	Charleston, S. C.	Supply Officer, Naval Aircraft Factory,	
Supply Officer, Navy Yard.....	Bremerton, Wash.	Navy Yard.....	Philadelphia, Pa.
Supply Officer, Naval Air Station.....	Norfolk, Va.	Supply Officer, Naval Research Laboratory,	
Supply Officer, Naval Air Station.....	Pensacola, Fla.	Anacostia Station.....	Washington, D. C.
Supply Officer, Naval Air Station.....	Jacksonville, Fla.	Officer-in-Charge, Navy Purchasing Office.....	Newport, R. I.
Supply Officer, Naval Air Station.....	Miami, Fla.	Officer-in-Charge, Navy Purchasing Office,	
Supply Officer, Naval Air Station, North		PO Box 9, Station C.....	New York, N. Y.
Island.....	San Diego, Calif.	Officer-in-Charge, Navy Purchasing Office.....	San Francisco, Calif.
Supply Officer, Naval Air Station.....	Alameda, Calif.	Officer-in-Charge, Naval Supply Depot,	
Supply Officer, Naval Air Station.....	Lakehurst, N. J.	Naval Operating Base.....	Norfolk, Va.
Supply Officer, Naval Air Station.....	Cape May, N. J.	Officer-in-Charge, Naval Supply Depot,	
Supply Officer, Naval Air Station.....	Anacostia, D. C.	Naval Operating Base.....	San Diego, Calif.
Supply Officer, Naval Air Station.....	Quonset Pt., R. I.	Supply Officer, Submarine Base.....	New London, Conn.
Supply Officer, Naval Powder Factory.....	Indian Head, Md.		

*—Inquiries regarding supplies for the Navy as a whole should be addressed to the Bureau of Supplies and Accounts, Navy Department, Washington, D. C.

Headquarters of Army Corps Areas and Departments

(Address: Commander, _____ Corps Area, _____)

FIRST CORPS AREA

Includes Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

SECOND CORPS AREA

Includes New Jersey, Delaware, and New York

THIRD CORPS AREA

Includes Pennsylvania, Maryland, Virginia, and District of Columbia

FOURTH CORPS AREA

Includes North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi and Louisiana

FIFTH CORPS AREA

Includes Ohio, West Virginia, Indiana and Kentucky

SIXTH CORPS AREA

Includes Illinois, Michigan, and Wisconsin

SEVENTH CORPS AREA

Includes Missouri, Kansas, Arkansas, Iowa, Nebraska, Minnesota, North Dakota, and South Dakota

EIGHTH CORPS AREA

Includes Texas, Oklahoma, Colorado, New Mexico, and Arizona, except that portion west of west longitude 114° and south of north latitude 33°

HEADQUARTERS

Boston Army Base,
Boston, Mass.

Governors Island,
New York

U. S. Post Office and
Court House, Baltimore, Md.

Post Office Building,
Atlanta, Ga.

Fort Hayes,
Columbus, Ohio

Post Office Building,
Chicago, Ill.

New Federal Building,
15th and Dodge Sts.,
Omaha, Nebr.

Fort Sam Houston,
San Antonio,
Texas

NINTH CORPS AREA

Includes Washington, Oregon, Idaho, Montana, Wyoming, Utah, Nevada, California, that portion of Arizona not included in Eighth Corps Area, and Alaska

HAWAIIAN DEPARTMENT

Includes all islands belonging to the United States within the area between 150° west longitude and 160° east longitude and between 15° south latitude and 30° north latitude

PHILIPPINE DEPARTMENT

Includes all islands of the Philippine Archipelago

PANAMA CANAL DEPARTMENT

Includes the Canal Zone

PUERTO RICAN DEPARTMENT

Includes the island of Puerto Rico with adjacent islands and keys, and all islands belonging to the United States within the Virgin Island group

HEADQUARTERS

The Presidio,
San Francisco, Calif.

Fort Shafter, T. H.

Manila, P. I.

Quarry Heights, Canal
Zone

San Juan, P. R.

Headquarters of Defense Command Areas

NORTHEAST DEFENSE COMMAND: Governors Island,
New York
SOUTHERN DEFENSE COMMAND: 44 South Second St.,
Memphis, Tenn.

CENTRAL DEFENSE COMMAND: Smith Young Tower
Bldg., San Antonio,
Texas
WESTERN DEFENSE COMMAND: The Presidio, San
Francisco, Calif.

National Defense Committee 1941-1942

PHILIP J. FAY, Chairman, Nichols & Fay,
San Francisco, Calif.

FELIX M. McWHIRTER, Vice Chairman,
President, The Peoples State Bank, Indianapolis, Ind.

L. WARD BANNISTER, Bannister & Bannister,
Attorneys, Denver, Colo.

WALTER C. COLE, Merrill Lynch, E. A. Pierce & Cassatt, Detroit, Mich.

JESSE DRAPER, President, Draper-Owens Company, Atlanta, Ga.

WALTER HARNISCHFEGGER, President,
Harnischfeger Corporation, Milwaukee, Wis.

JOHN A. HOLABIRD, Holabird and Root,
Architects, Chicago, Ill.

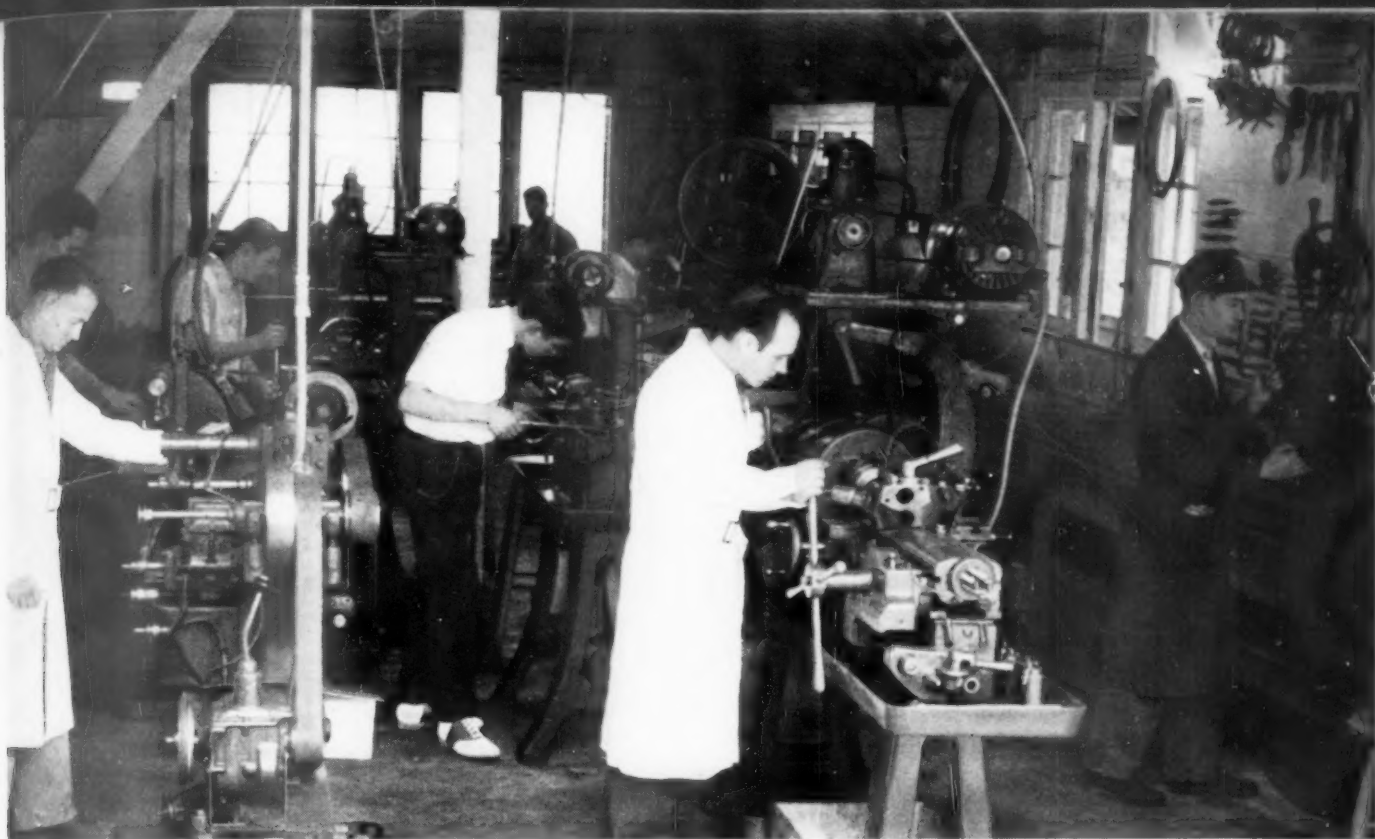
T. J. MORONEY, Republic National Bank,
Dallas, Texas

ROBERT H. PATCHIN, Vice President,
W. R. Grace & Company, New York, N. Y.

LEWIS E. PIERSON, Honorary Chairman,
Irving Trust Company, New York, N. Y.

E. M. STAYTON, Kansas City Public Service Company, Kansas City, Mo.

T. GUY WOOLFORD, Chairman of Board,
Retail Credit Company, Inc., Atlanta, Ga.



Part of the \$50,000 worth of machine tools and some of the young mechanics

Henry Ford of the Spindizzies

By JACK POLLEXFEN

NOT knowing that "frontiers are closed to youth" a 17-year-old high school boy has built a \$100,000 business on toy autos

FIVE YEARS ago a 12-year-old boy disgustedly dug through the wreckage of his model plane. Three months had been spent building it—and it crashed in three seconds. The only salvage was the miniature gas engine.

The boy found an old toy auto and started tinkering in his backyard workshop, trying to make the car run with the tiny motor.

Today Stanley Hiller's toy auto tinkering has led to a mass production manufacturing business grossing \$100,000 a year. Stanley, a 17-year-old high school student, is the "Henry Ford" of the spindizzy industry. He is producing 250 miniature racing cars monthly in the barn back of his Oakland, Calif., home—rolling them off an assembly line in true Detroit style.

Hiller is not old enough to know that "the frontiers of industry are no longer open to American youth." Spindizzies



Hiller himself (right) takes a hand in production as cars roll by on the plant's miniature, but modern, assembly line

—ounce for ounce—are the fastest things on wheels. Racing them is the latest U. S. craze. As late as '39, model autos were kids' toys. Today, a single Sunday will see 20,000 in roaring action, whirling in dizzy circles at a 60-mile clip, at tracks sprinkled across the nation.

Many tracks foster races

"SPINDIZZIES" generally are about 18 inches long, weigh about six pounds—and cost anywhere from a few dollars for a home made job up to hundreds for a custom designed racer. Powered by quarter-horsepower gasoline engines, they have already set speed records of more than 90 miles an hour.

Racing tracks are found in New York, Boston, Philadelphia, Chicago, San Francisco, Los Angeles, and scores of other cities and towns. A track, in the simplest form, is any hard, level surface, big enough to allow a 60-foot circle. A post is set in the middle of the circle and the cars, attached to the post by a cable made of steel airplane wire, spin around and around. More elaborate tracks sometimes race the roaring bugs on steel guide rails rather than

In the production end, the spindizzy industry shows a striking parallel, even if only in miniature, to the early days of the auto industry. Scores of would-be manufacturers dove into the business. Some comparatively well financed, others building cars and making parts in attics and basements. Practically all the manufacturers, like the pioneer gas buggy builders, are active in the racing end of the game. A new speed record sends the sale of cars shooting skyward—the very names of the cars have the whiz of speed—Rockets, Streamliners, Champions, Zippers, and Hiller's Comet.

Most of these manufacturers, however, either built custom-built racing cars for fans with well-upholstered pocketbooks, or else turned out kits for build-it-yourself models.

Hiller was the first to go all out for the mass market with a car that came from his factory ready to race. It even came in its own garage—a container in which car and tool kit could be carried. And the price is \$36 F.O.B. Oakland. Like Henry Ford's before him, Hiller's problem became mostly one of production.

The Comet is the last word in a mass

engineering, with real piston rings, spark plugs, rotary valves, and a fan driven cooling system. The Tom Thumb carburetor is an amazing gadget, adjustable to either regular gasoline or the strange racing "dopes." The dopes are doctored up fuels, containing gasoline, denatured alcohol, ethyl, or whatever the racing bugs figure will give their spindizzies that last, winning spurt of speed. Each racing bug treasures his personal formula as a closely guarded secret—but Hiller doubts if anything performs much better than a good aviation gas with a high octane rating.

Young Hiller believes in manufacturing his own parts. Worst headache, perhaps, was tires. First toy auto tires were used. They melted under the grueling speeds. Next bright idea was to use the tires a big tire manufacturer puts around small ash trays as an advertisement. These were better—but not enough better. Today Hiller Industries, Inc., has its own miniature tire factory.

Scores of engineering and technical research problems had to be licked before the Comet was really rolling off the line, so many problems that one veteran automobile man, who recently inspected the plant, states:

Man, there are more unbelievable solutions to impossible problems in this place than you'll find in half a dozen major auto plants. Why, this Hiller kid just doesn't know you can't do such things—so he goes ahead and does them.

Painted on a conveyor line

DIES, presses, stamps, lathes, and scores of other pieces of machinery stamp, roar, and hum, turning out parts in this backyard barn factory. Perhaps the mass production technique reaches its peak in the painting department. Human hands don't touch the cars once they go on the paint racks. A sliding conveyor runs the little autos through a spraying chamber—then into a drying oven. This operation is repeated several times to assure a baked, glossy finish that will stand up under seasons of hard racing. Hiller turns out cars in every hue. Red is the most popular color in every section with but one rather puzzling exception. In the Southwest they go for white cars.

Hiller Industries, Inc., generally has about 20 employees. Two are adults, a master machinist who serves half as a craftsman, half as a teacher—the other adult handles the one problem that stumped young Stanley. He is an accountant who keeps wages and hours, taxes, and other matters in shape for U. S. governmental inspection. Hiller sadly says you would be surprised at the amount.

The rest of the staff are of high school age, recruited from the ranks of
(Continued on page 72)



The barn where Hiller first tinkered with a toy auto is now a factory which does things that are "impossible"

cables, have stands for spectators, photo electric timers, lap counters, and work-pits for emergency repairs.

Typical "spindizzy" addict is a mechanically inclined high school boy, but plenty of bigwigs like Lenox Lohr, recent head of N.B.C., sit up nights nursing their baby engines. The present world record is held by Lieut. Col. L. A. Smith. Auto and aviation engineers watch the sport closely. Some new kinks in engine design are finding the miniature tracks an ideal proving ground.

production product. Cars move down a power-driven conveyor belt as a score of hands assemble the parts. The barn workshop now contains close to \$50,000 worth of machine tools. A big steel press stamps out bodies, pans, and frames. The differential is pressed out of steel with special machines cutting out the hardened gears. It has five high speed bearings.

The quarter-horsepower engine, turning over at better than 15,000 revolutions a minute, isn't as big as a child's fist, but it is a beautiful job of precision



PHOTOS BY K. S. BROWN

A forest fire must be attacked within fifteen minutes after it starts to prevent it from destroying hundreds of acres of timberland

Man-Made Timber Crops

By MELVIN ARNOLD

PRIVATE interests demonstrate that new timber can be grown like any other crop to eliminate fear of any future lumber shortage

TWO SHAFTS of lightning, striking desolate Washington State stump land, highlight a most ambitious program undertaken by private industry for rebuilding America's forest resources.

The first bolt struck in mid-1940, setting off a forest fire that required 500 fire-fighters to stem its spread. When halted, the following week, it had laid waste 3,000 acres of cut-over land.

The second bolt struck almost exactly a year later, and in the same area. As the first column of smoke rose into the sky it was spotted by watchers on two widely-separated towers. Within 26 minutes the blaze was extinguished. It was brought under control by a crew of five men—not the 500 of last year.



This instrument enables lookouts to determine the exact location of a fire that has just started



All construction crews stop work when a general alarm is given. Bulldozers are loaded on trucks, rushed to fire and put to work clearing fire-breaks near the edge

The damage was three-tenths of one acre.

When the lightning struck a year ago, it set fire to an area that was just some more cut-over land. But *this* year the lightning-struck area was part of the newly-created Clemons Tree Farm, an empire embracing 130,000 acres, or 200 square miles, near the Pacific Ocean in Washington State. About one-half the land is owned by the Weyerhaeuser Timber Company; approximately one-fourth by the state and counties; the remaining one-fourth by miscellaneous small owners. Because of the steep, rugged terrain, the farm is not suited for general agriculture.

The farm is named after Charles H. Clemons, who first started to harvest the virgin crop of timber in this region 40 years ago. Bill Price is the head "farmer." He plans to devote a major part of his energies to cultivating this and subsequent tree farms; yet he will have to wait almost until the year 2000 before harvesting his first crop!

Perched on the deck of a "lookout tower" which rears high above Minot Peak near the center of the farm, Bill Price tells the story to his visitors:

We're setting out to prove that timber is a crop. If we prove that—and I'm sure we will—then the face of America is due for a big change. Because timber is a living resource, it can be made a permanent resource for America.

If we can demonstrate that timber can be grown as a crop, and at a profit, then

a sizeable portion of America will come back into rapid production of wealth. The country will be assured a continuous supply of all-important forest products at low cost.

Our figures indicate that, when this farm is in full production, the trees will grow 100,000,000 to 130,000,000 board feet of merchantable timber every year. At today's average prices, this means an annual production worth \$2,000,000 to \$3,000,000. On our farm, land is capable of growing an average of 1,000 board feet of Douglas Fir lumber, on each acre, every year. You can get an idea of the immensity of this growth by remembering that, in many pine forests, a growth of only one-tenth that amount is considered good. (A "board foot" represents a piece of lumber which is one foot square and one inch thick.)

Faster than natural growth

THE Clemons Tree Farm's expected minimum production of 100,000,000 board feet of lumber is enough to supply average-size new homes, every year, for a city of 35,000 population.

Most visitors are startled to learn that the area can produce substantially more wood when operated as a farm than it did in the natural state. The reason is simple: By cutting slow-growing mature trees, and seeing that every acre of land is fully stocked, the foresters will keep the farm supplied with trees which are in the fastest-growing years of their life.

Farmer Price led us down the long ladder of the lookout tower to one of the "plantations," where thousands of

Douglas Fir seedlings are growing. These seedlings are planted by hand to speed up the process of natural propagation, especially in large areas where the loggers left no "seed trees" standing and where fire has killed these seed trees and also new growth. Price estimates that \$500,000 will be required for artificial restocking of those areas which need it. Last winter 300,000 trees, mostly about 12 inches high, were planted on the farm. More are scheduled for the next few years. More recently the practice has been to leave scattered blocks of seed trees standing. The wind distributes seeds throughout the intervening countryside. This natural propagation is so intensive that on many an acre there will be 50,000 seedlings or even more. As these grow, the vigorous trees will starve out the weaklings and, by the time the trees become mature, the number per acre will be reduced to about 100. That's "survival of the fittest" with a vengeance!

After the farm is fully stocked, the operators can do little to speed the growth. They must rely upon rain, sun, and soil. What they can, and must, do, if the farm is to succeed—is to hold fire losses to a minimum.

In a few hours or days fire can doom the entire project. Experience indicates that a crew must begin throwing water on a fire *within 15 minutes* after it starts to prevent the fire from getting

out of control. More than anything else, the operation of America's greatest crop farm is a ceaseless fight with fire. Farmer Price and the others know that several dozen fires will break out every dry season. Cost data show that the project will have to be abandoned if all the fires in a season spread over an average of more than one-fourth of one per cent of the total area. All those inevitable fires must be halted before they burn more than 335, out of the total of 130,000 acres! (Remember that one 1940 fire raged through 3,000 acres.)

A way to prevent fire

AN impossible fire-fighting task? Farmer Price thinks not. For the job, he and his associates developed a unique system of "total defense" against the "total war" of fire. The system has many similarities to modern military practice in which small forces of highly-mobile, heavily-equipped shock troops replace the former mass armies.

While we were inspecting the Clemons Tree Farm, radio programs were repeatedly interrupted with appeals for thousands of men to fight fires. On that very day, some 1,500 forest fires were burning in Washington and Oregon. Mass armies were needed to battle these blazes.

The Clemons Tree Farm fire defense is based on providing elaborate facilities for keeping fires small. The plan centers around the conviction that "One man with a bucket of water when a fire starts is worth 100 men the next day." The most important feature of the Clemons fire-defense plan is the building of 170 miles of roads. Much of the road mileage is being developed on abandoned logging railroad routes. The main roads are limited to ten per cent grades, and will handle travel at 35 miles an hour. There will be some kind of a road, capable of carrying heavy fire-fighting equipment, within 1,000 feet of all restocked land. Firefighters will be able to reach every new tree on the farm in a hurry.

A fire-fighting brigade has been organized along lines similar to city fire departments. A permanent crew is on duty day and night. Men posted on lookout towers, district chiefs and gatemen call the dispatcher at regular intervals to test the telephone lines. Ninety miles of lines tie

them all together. Watchers who patrol the danger spots call in after every trip. These patrolmen carry portable telephones and can make a connection at any place on the lines. Motors of the tank-trucks are started and warmed up three times a day.

Special attention is given to water supply. It is impounded in stream beds by earthen dams built at road crossings. Springs and natural water holes at stream sources are being enlarged. To supplement these, the plan is to build water tanks on the highest ridges.

One of the brigade's regular full-dress mock battles was staged after we climbed atop a lookout tower. The battle began when a small smoke bomb was exploded on a hillside a quarter-mile distant. The lookout men did not know the test was being made, but almost instantly spotted the thin column of smoke and telephoned the dispatcher.

A minute later we heard the distant sound of a truck engine coming to life with a low-throated roar. Then we followed the cloud of dust which traced the truck's progress. In six minutes, we saw a stream of water arching over the stump land. The water was pumped

from a 500-gallon tank on the truck, through 200 feet of rubber hose which is carried on a reel above the truck body. While one man was dousing the bomb, other members of the crew were clambering down the slopes, carrying canvas fire hose and a portable pump to a creek below. When the tank on the truck neared the empty mark, the lines of canvas hose stiffened as the pump sucked up water from the stream. The hillside soon was flooded with water, and it was clear that any fire, spotted as quickly as this smoke bomb, would have been extinguished.

However, the crew wanted to make this a full-scale sham battle, so it was assumed that the "fire" was getting out of control. A call went through for a tank-truck from the adjoining district, which started instantly. With the call for additional equipment, all construction crews stopped work throughout the farm, and the road-making "bulldozers" were loaded on trucks. By the time the bulldozers arrived, the second tank-truck was delivering four more streams of water. The bulldozers were put to work clearing a "fire-break" as close as possible to the advancing line of the fire.

Private industry

WE pointed out at the beginning that the Clemons Tree Farm program is a venture of private enterprise, based on the expectancy of a profit. If this farm pays a profit, private capital will be encouraged to repeat the venture.

Roderic Olzendam, spokesman for Weyerhaeuser, presented the following contrast between nature's virgin crop of timber and the crop which is being raised by the ingenuity of man:

The first crop of trees paid no taxes during most of its growing period because during most of that time man was not there; the second crop will pay taxes all the time it is growing.

The first crop employed no one while it grew; the second crop will employ many men while it grows. There was only one harvest of the first crop in 300 years, because the harvesters did not arrive in time; the next 300 years will provide more than three harvests.

Less than 40 per cent of the first crop could be used, because it was overripe; we will use more than 80 per cent of the second crop; perhaps 100 per cent.

The cutting of the first crop left the land largely unproductive; while the scientific harvesting of the second crop will enable the land to produce tree crops through the decades.



Crews scramble down mountain side to carry portable pump and hose to nearest stream

Business IS READY!

★ **WARS ARE WON** by the patient, painstaking work of bringing loose ends together. It goes on over a thousand desks and conference tables in business, as well as at the firing post.

The administrative machinery of the trade associations is already set up and tested by years of trial and error. To get concerted action from any industry, the direct, obvious and speedy approach is to go to its trade association and use the established organization. Our trade associations stand today 2,500 strong, eager to do their part to bring victory quickly and efficiently.

In local communities is another kind of organized business, represented by chambers of commerce and boards of trade. These agencies have met emergencies of every sort in fires, floods, earthquakes and epidemics. In them, America's commercial and industrial might is already mobilized.

ALBERT W. HAWKES, *President*
Chamber of Commerce of the United States

"... of Indispensable Value"

By **W. J. DONALD**

*President, American Trade
Association Executives*

TRADE ASSOCIATIONS have, for more than a year, been adjusting their activities and organizations to the national defense program.

Like the men composing the industries they represent, they have a sound instinct to serve their government and their country well.

Now they must adapt their work and help the industries they represent to adapt themselves to the Victory Program.

Their functions will be, as they have been, educational and advisory to—and liaison with—governmental defense agencies.

Trade associations provide the Government with a ready-made machinery for acquiring quickly vital information, advice and help from industry.

They facilitate the harnessing of the resources of industry to the successful prosecution of the war.

They can marshal for governmental use the knowledge of an entire industry, members and non-members alike, on technical problems; for instance, on conservation of critical materials and on substitution.

They can assemble estimates of quantities of materials required by an industry for use in planning allocation programs.

Better than anyone else, they can provide names of all known members of an industry. Most trade associations have brought such lists completely up-to-date.

They can facilitate the making of recommendations by manufacturers to the Government on simplification of product lines for the purpose of conserving inventories and skilled labor and increasing production, as well as the

(Continued on page 73)



W. J. Donald

"... Most Effective Results"

By **RUSSELL RHODES**

*President, the National Association of
Commercial Organization Secretaries*

THE WAR can best be directed from a central headquarters—Washington. But the war cannot be won until every city, village, and hamlet has been enlisted for its own contributions. Above all, these contributions must be organized.

America has long been recognized for its ability to coordinate one group with another. In this emergency we do not need to set up new machinery. It is ready NOW. That means something to us all in our all-out efforts to resist the aggressors and to defend America.

Our most effective results will be obtained when the particular task of each individual and each firm is geared into the tasks of the whole community.



Russell Rhodes

Three thousand Chambers of Commerce are already thoroughly organized and prepared to assist our Government and its gigantic war program.

We have tendered our services to the President, and—as in 1917, when we entered the first World War—we have the machinery through which business men can best act.

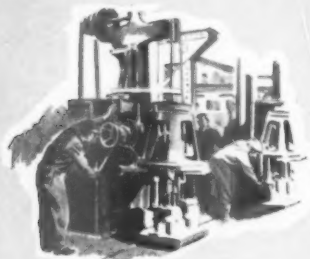
Every loyal American is prepared to sacrifice his personal interest for the larger interests of his country. He now wants to know how he can best serve.

What can he do? Here are four suggestions:

Production—Plants, agencies or organizations which can do so must aid in the manufacture and transportation of goods needed for the defense of America and for the prosecution of the war. In the many problems from contract to delivery your Chambers of Commerce can and will help you.

Protection—In this group we find our Civil Defense Activi-

(Continued on page 73)



MATERIALS



MANPOWER



FIGURES

... ALL THREE ARE ESSENTIAL

**New and Timely
Information on These
Subjects Now Available**

Yours for the Asking

- MATERIAL CONTROL . . . ☐
- COST RECORDS . . . ☐
- PAYROLL RECORDS . . . ☐
- EARNINGS CALCULATION
AND ACCRUAL . . . ☐
- PURCHASE AND PAYMENT
RECORDS . . . ☐
- EXPENSE DISTRIBUTION . . ☐
- STATISTICS . . . ☐
- BUDGETARY CONTROL . . ☐
- BILLING . . . ☐

Name _____
Firm _____
Street _____
City _____

It takes figures—accurate and up-to-the-minute—to make production plans . . . to keep materials moving toward scheduled points of assembly . . . to meet payrolls promptly . . . to provide management with the statistical controls on which to base quick decisions. Today, when minutes count, both government and industry are using Burroughs Statistical, Forms Writing, Book-keeping, Calculating and Adding Machines to meet these vital figuring needs in less time, with less effort, and at less cost.

BURROUGHS ADDING MACHINE COMPANY
6101 SECOND AVENUE, DETROIT, MICHIGAN

Today's
Burroughs

DOES THE WORK IN LESS TIME • WITH LESS EFFORT • AT LESS COST



Six hundred mass-production houses were erected at cost of less than \$2,800 each

An Assembly Line for Houses

By R. L. VAN BOSKIRK

GLENN L. MARTIN, pioneer airplane builder of Baltimore, has supreme faith in the future of aviation. He foresees a tremendous peace-time aviation industry in which construction of trans-ocean giants will give employment to thousands of workers. He has given tangible expression to his faith by creating the first segment of a new and permanent "village" to house 125,000 persons within a three-mile radius of the factory. If the new city materializes as Mr. Martin thinks it will, it will be the second largest in Maryland.

Outstanding feature of the new development is a house unique in the construction industry. This house has a one-layer wall. There is no outer shell or inner lining. Tests have proven it moisture proof. Horizontal rather than vertical construction has been successfully applied to its erection. The roof is fitted with trusses like a factory building. There are 100 square feet of glass in the living room walls. Mass production methods have been applied in the building of 600 houses to date at a cost



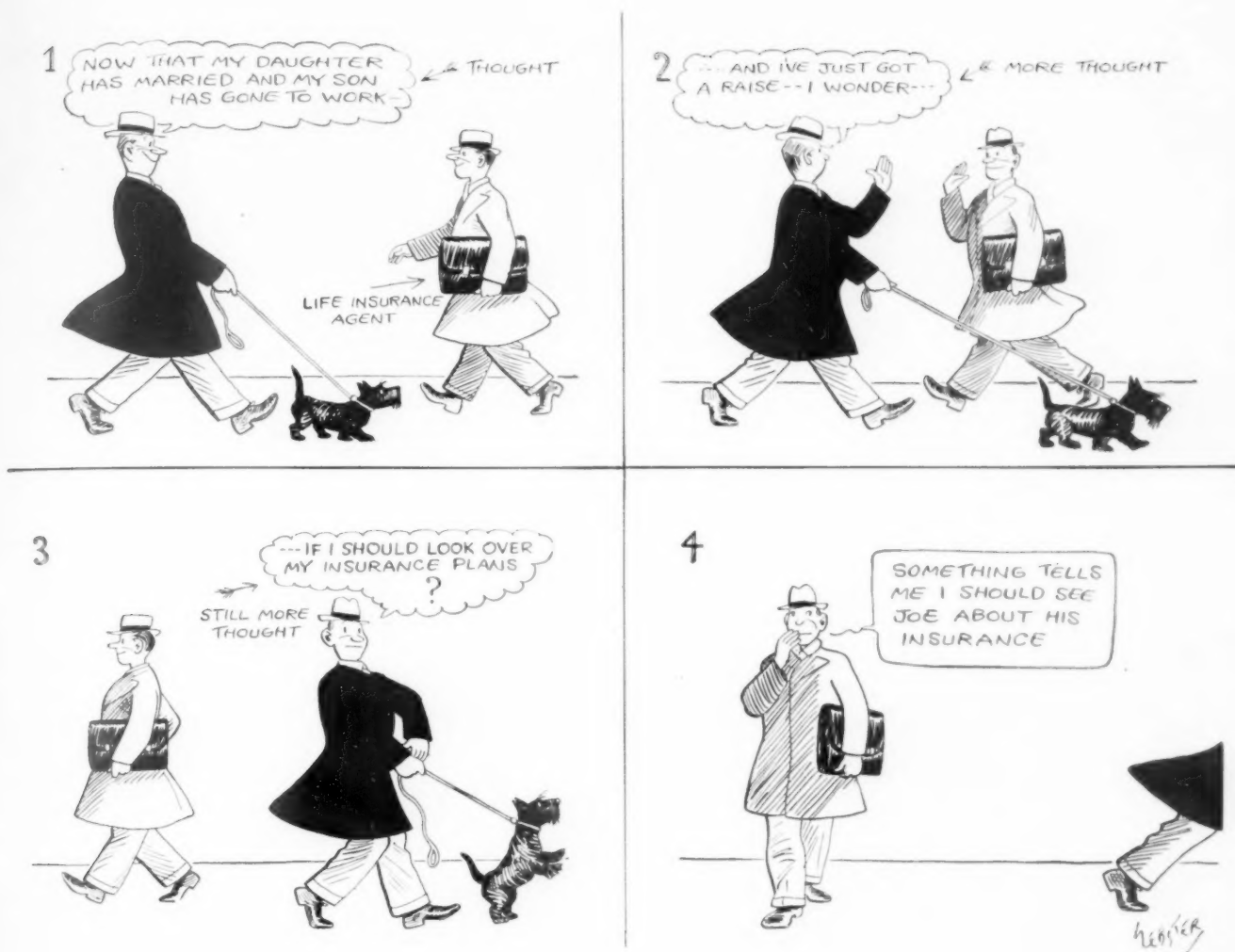
An oil burning floor furnace is put in each house before flooring is laid

of from \$2,500 to \$2,800 each.

Glenn Martin didn't invent this new house, but he has certainly exhibited his pioneering courage in giving it a thorough trial. The houses are no makeshift substitute just one degree better than a tent or a hut. They are designed to be permanent. The skeptics may omit all ideas of altruism if they wish, because Mr. Martin reasons that satisfactory living conditions improve his workers' ability to produce results.

The Martin interest in housing predates the present emergency by a wide margin. The circumstances surrounding the choice of his present 2,000 acre site are worth telling because of the insight they give on his ambition to find a plant site which would eventually provide the setting for a self-contained "village."

H. Findlay French, Director of the Baltimore Industrial Bureau, who worked closely with company officials long before the plant moved to Baltimore, says that, all through the negotiations, Mr. Martin regarded availability of desir-



If your life insurance agent were a mind reader

MAYBE IF YOUR life insurance agent were a mind reader, he could be of even greater service to you than he is now.

However, because he is not a mind reader, the effectiveness with which he serves you and your family depends a good deal upon the information you give him about your personal and family affairs.

► Perhaps, since you last talked with your agent, there has been a birth in your family. Maybe a son has begun to support himself. Or it may be that increased income enables you to think in a new way about your own future.

Suppose, for example, that your older children are no longer dependent upon you. In such a case, you may wish to review your life insurance program and possibly elect a different method of settlement. To advise you properly, an agent must take many factors into account. Will

your son or daughter need further financial aid in the future? Have your living expenses been reduced so that you can now plan more definitely to retire?

► Your agent can assist you with these and similar questions in so far as they relate to life insurance. To help you best, his services must be personal services, based upon consideration of your individual needs and circumstances.

If you are a Metropolitan policyholder and feel that a change in your

situation calls for a review of your policies, get in touch with your Metropolitan agent. If you will tell him what is in your mind, you will find him equipped to serve you efficiently and wisely; if necessary, he will enlist the help of Metropolitan's Home Office.

► Your agent's services are always available without additional charge of any kind. He will consider it a privilege to have you call him. Or, if you prefer, get in touch with your Metropolitan District Office.

COPYRIGHT 1941—METROPOLITAN LIFE INSURANCE COMPANY

This is Number 45 in a series of advertisements designed to give the public a clearer understanding of how a life insurance company operates. Copies of preceding advertisements in this series will be mailed upon request.

Metropolitan Life Insurance Company

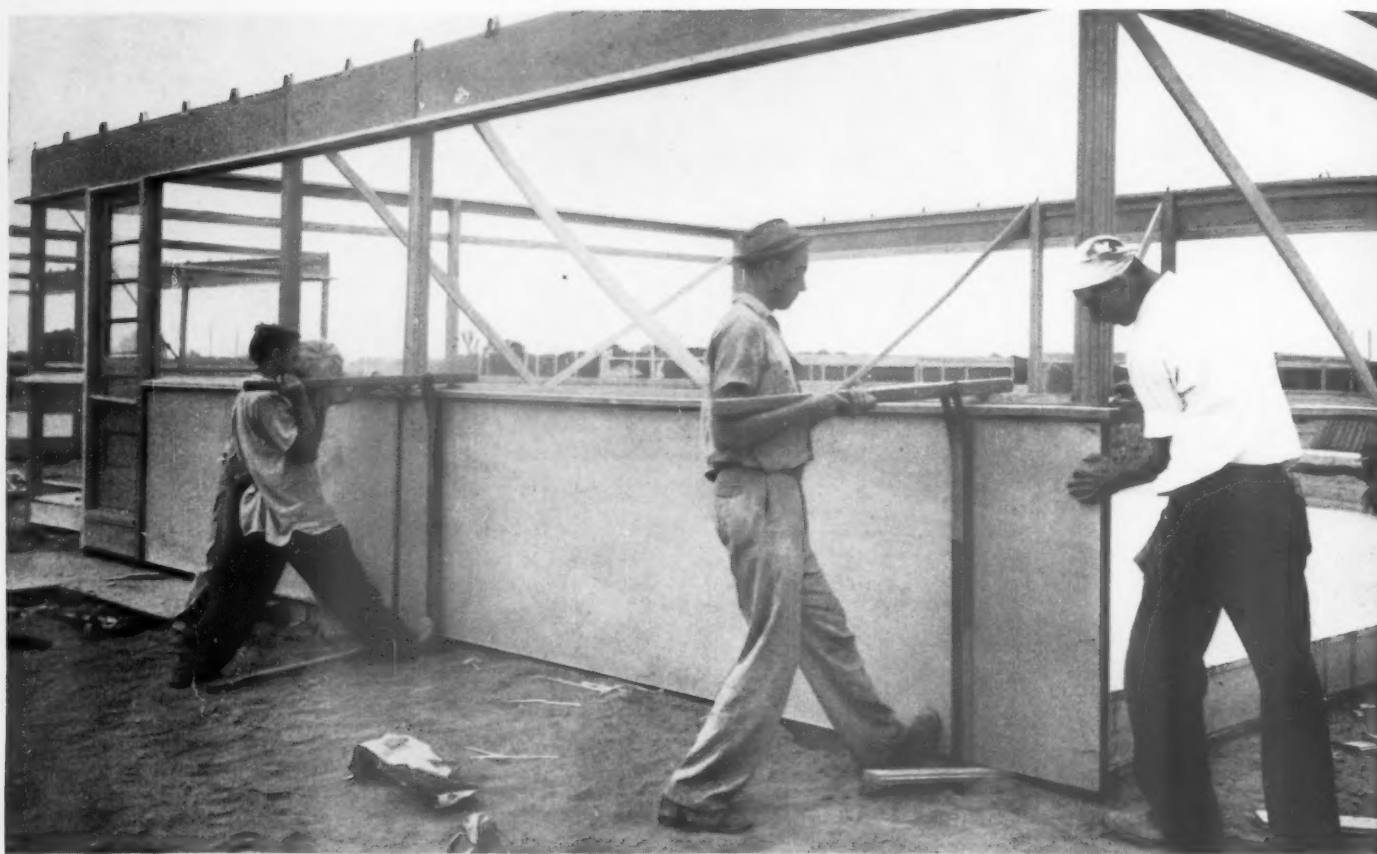
(A MUTUAL COMPANY)

Frederick H. Ecker, CHAIRMAN OF THE BOARD

Leroy A. Lincoln, PRESIDENT

1 MADISON AVENUE, NEW YORK, N. Y.





The house is erected horizontally rather than vertically. Picture shows 12 by 4 foot panel being applied to lower section of wall. Clips at top will secure roof trusses

able living quarters for his employees as a necessary requirement. At one period in the proceedings he refused to locate the plant in a section of Baltimore adjacent to a heavy industrial and chemical manufacturing area. According to Mr. French, Glenn Martin was an expert championing the cause of better housing before many of the "Johnny-come-latelies" started beating their drums.

Sought a tidewater location

THE company moved from Cleveland to its present site at Middle River on the outskirts of Baltimore in 1929. Envisioning a great future for enormous seaplanes, Martin needed tidewater and Middle River, an estuary of Chesapeake Bay, provided a large expanse of water unimpeded by navigation. There were good rail connections and it was within a few hours' trucking distance of 90 per cent of the Company's suppliers. Washington, D.C., which has become such an inevitable participant in every business man's affairs, was only a few miles away.

Several years of investigation preceded selection of the site. Martin himself made airplane trips over the coastal area seeking the most satisfactory location. An official in his company says that he finally marked the designating X on a map, showed it to his

purchasing agents, and then continued his apparent investigation. Meanwhile the purchasing agents conducted numerous hunting expeditions into the desired acreage and bought up small and large parcels one by one as prospective hunting preserves. Before speculators could hike up the land cost, Mr. Martin's agents had bought ground not only for a factory site, but enough additional to provide adequate space for housing.

The need for homes developed more rapidly than anticipated. After Munich, airplanes became the most sought for industrial product in existence. Production zoomed. In a few months the Martin pay roll had increased to 17,000. By next February or March there will be 42,000. Every day there are 10,000 workers' automobiles on the parking lot. Ninety per cent of them drive from Baltimore. The congestion is terrific. It takes about 25 minutes to make the trip from downtown Baltimore under normal driving conditions but, when shifts are changing, it takes one hour or more.

It is obvious that more housing within walking distance of the plant would partially relieve traffic problems. Martin officials recognized that problem long ago and started their first housing development before large scale building became imperative.

The Government recognized the emer-

gency character of the situation by building five T-shaped one-story wooden dormitories for 300 bachelor workers and moved in 200 trailers as temporary housing.

These measures helped only a little. So Mr. Martin took the bit in his teeth and offered to build one house for every two the Government put up. Then he put his housing operations under the direction and management of architect and engineer, Jan Porel.

Porel dissected and compared 32 systems of building construction in search of a low-cost, permanent dwelling. After making his choice, he built an experimental house last fall and submitted it to every possible test during the winter.

Housing was well developed

THE structural design was perfected by the John B. Pierce Foundation of New York, a non-profit organization which spent 16 years studying and developing low-cost housing. Since 1932, when actual construction of experimental homes began, the Foundation has spent \$2,000,000 on test houses.

The houses are complete with tile-trimmed bath, plumbing, electric refrigerator, water heater, stove and oven. A small oil burner placed under the floor and serviced by lifting the register provides heat. Upkeep of the



I said,
"Go ahead
and fire me!"

- "It's a wonder I ever keep a job, the way I fly off the handle!
- "Like yesterday. My Boss made some remark about how slow I was in getting out some important figure work — and I blew up! I said 'Wait a minute, Mr. Wallace! I'm a good calculating-machine operator — but I can't work *fast* on a slow machine!
- "You never complained about my work when we had those Model M Comptometers here. And it certainly isn't *my* fault that the Payroll Department talked you into lending them our Comptometers, and palmed off these other machines on you. And it isn't *my* fault that these other machines don't have any Keystroke-Censor to O.K. every key stroke for accuracy and give me the operating *confidence* that means top operating *speed*!
- "And you can't blame *me* because this is a tape machine, and doesn't have a lot of Comptometer features. All right then — go ahead and *fire* me — but don't blame *me* just because the Payroll crowd pulled a fast one on you!"
- "He didn't fire me, though! He just said, 'Miss Coyle, your impertinence is matched only by your figure-work sagacity.' Whatever *that* means!"

• For a demonstration of Comptometer *machines* and modern Comptometer *methods*, in your own office on your own work, telephone your local Comptometer Co. representative . . . or write direct to Felt & Tarrant Mfg. Co., 1712 N. Paulina St., Chicago, Ill.

COMPTOMETER

REG. U. S. PAT. OFF.

ADDING-CALCULATING MACHINES



houses is expected to be low since they require no painting or decoration inside or out, except for doors, windows and a small amount of trim.

Cemesto board, which comprises the complete wall of the house, including exterior and interior finish, consists of cane fiber insulation sealed with an asbestos-cement compound. This product is the result of ten years' experiment by the research department of the Celotex Corporation under the guidance of its president, Dror Dahlberg, founder of the company, who has been carrying a torch for low-cost housing these many years.

The foundation is a concrete footing and concrete block pier. On this is laid a precast concrete beam reinforced with steel rods and banked to the top of the concrete joist. Crawl space is provided beneath the floor.

A skeleton wood frame, cut to exact shape, notched and grooved at the mill, is assembled at the job. Large sheets of one and one-half inch thick Cemesto, four by 12 feet, are attached to the lower course of the skeleton. Shorter pieces, cut to leave window space, are secured in the second course and prefitted windows are fastened immediately. A third panel and a plywood girder above the windows complete the side-wall unit. A damaged panel can be taken out and replaced any time. Au-

thorities say that this is the first time that horizontal—as against vertical—wall erection has ever been successfully applied. Described by the trade as skeleton frame and curtain wall, it answers the old complaint against use of cumbersome walls as weight carriers.

The roof is erected with a bridgelike truss construction, similar to factory roof design, and the trusses are fastened in with hurricane clips. The roofing is an insulation material of specially formed shingles, seven feet long and 15 inches wide, encased in a 90-pound asphalt roofing felt surfaced with mineral granules. This material combines sheathing, insulation and roofing all in one piece.

Houses are complete

EACH house is on a minimum 48 by 100 foot lot and, when completed, measures 24 by 28 feet inside. It contains, without apparent crowding, a living room, dining alcove, hobby room, two bedrooms with closets, kitchen, linen closet, bathroom and porch. Interior partitions are of one-inch insulation board and the ceiling is an insulating material requiring no finish. The floors are laid with quarter-inch fir flooring.

Most striking effect in the living room is a large, one-quarter-inch-thick panel of immovable, crystal plate glass set

into the side wall, in addition to windows. The builders say that the insulating qualities of the wall permit this expansive use of glass without fear of cold weather.

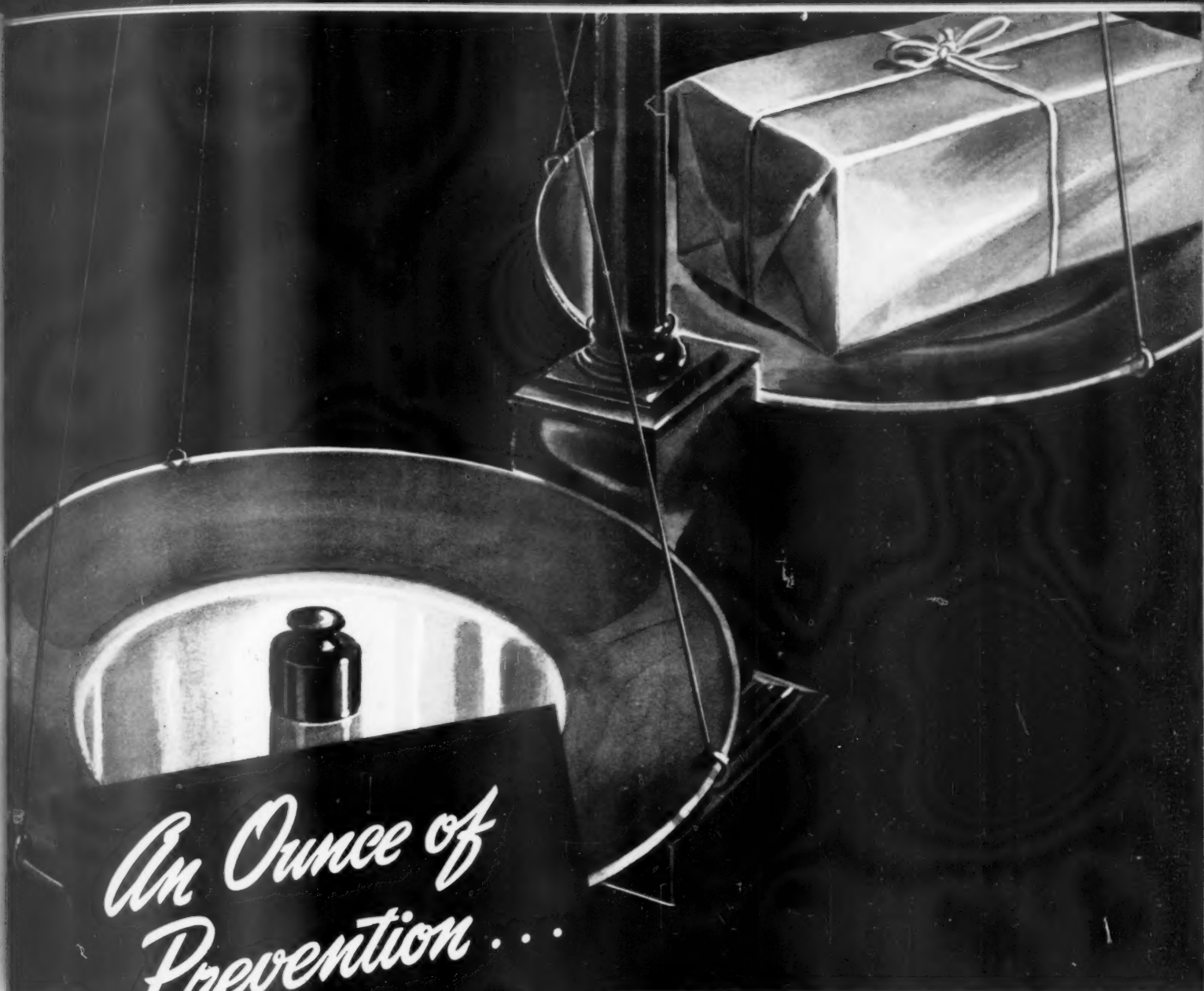
Other modern conveniences, many of which are not to be found in much higher priced houses of ten years ago, include such things as an outside electric meter, switch boxes that do not require fuses, weatherstripping, a porcelain enamel flue, copper water lines and screening, casement windows, swing faucets, built-in kitchen cabinets, built-in tubs and shower. Mr. Porel says that the fixtures used would be employed in any 40-year-life house. They include copper piping and the new type pressed metal tub and lavatory.

Low cost is largely achieved by the method of construction. The mass production formula has been directly adopted. A field shop, under canvas, on the job site is provided for rough carpentry and the assembly of such units as the 24-foot roof trusses. Each operation is handled by a small, well-trained crew of from eight to ten men who perform a definite job such as foundation laying or side-wall erection, and then move on to the next site while another crew performing another operation succeeds them. The speed with which homes were made available in-

(Continued on page 63)

Careful planning has utilized every inch of space. Living room seems unusually large and airy. Venetian blind covers panel of immovable plate glass set into the wall





*An Ounce of
Prevention . . .*

in Business can save brain hours and hand hours and create more production hours

"*PRODUCTION!*" is the insistent call of the times. A huge and constant flow of products is required. The best possible use of every production hour is a vital necessity, and it is obvious that methods that *prevent the waste of brain hours and hand hours* will go far in improving results.

Addressograph-Multigraph methods are an

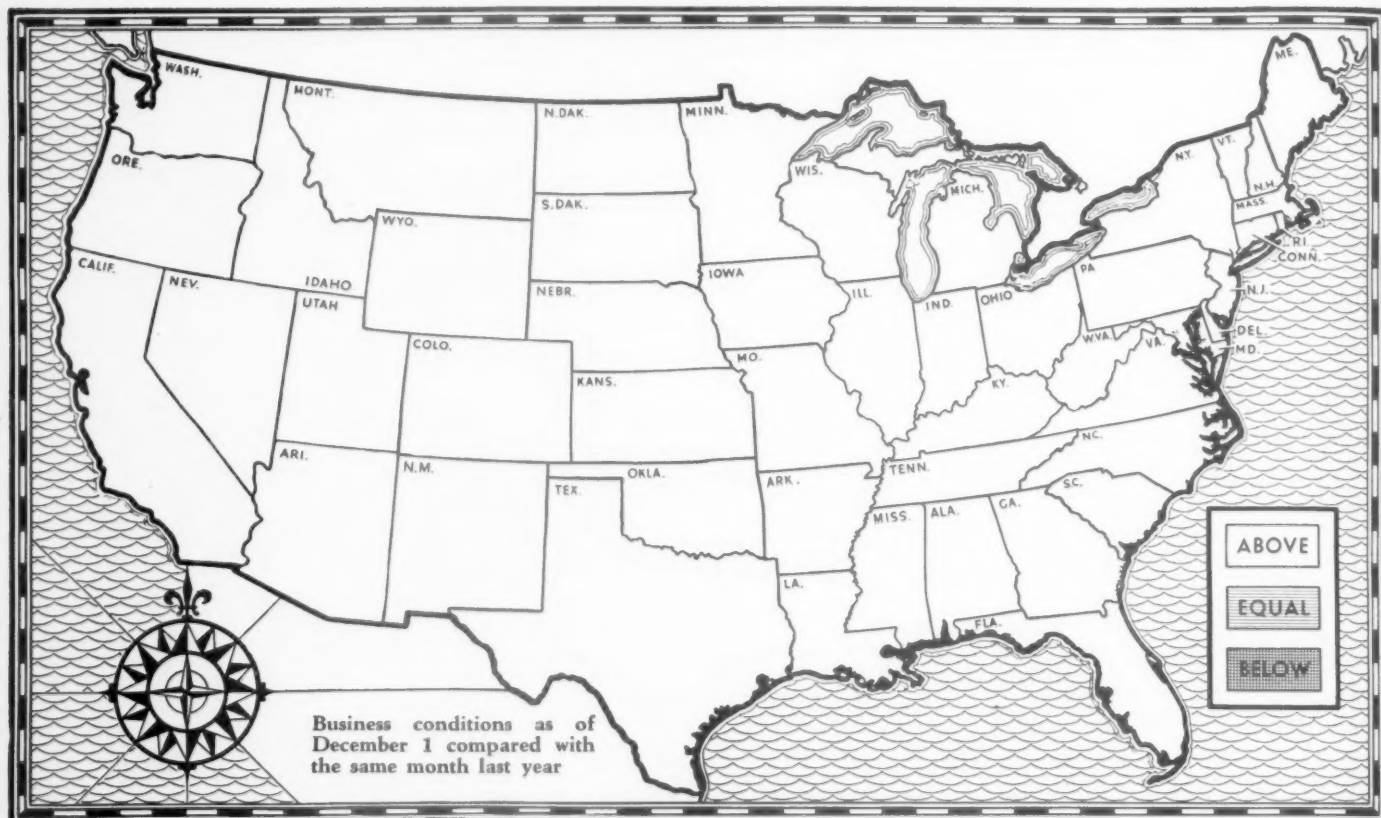
effective preventive against waste of time and money in handling procedures which control production and allied activities. They simplify the preparation of information needed to guide operations and co-ordinate its use. Mistakes are eliminated. The production of employees is increased and operating expense reduced.

TO USERS OF OUR PRODUCTS: *You are entitled to the services of our Methods Department in helping to extend the use of your present equipment. If you are interested in receiving up-to-date information, it is available to you on request, without charge.*

ADDRESSOGRAPH-MULTIGRAPH CORPORATION • Cleveland, Ohio

The MAP of the Nation's Business

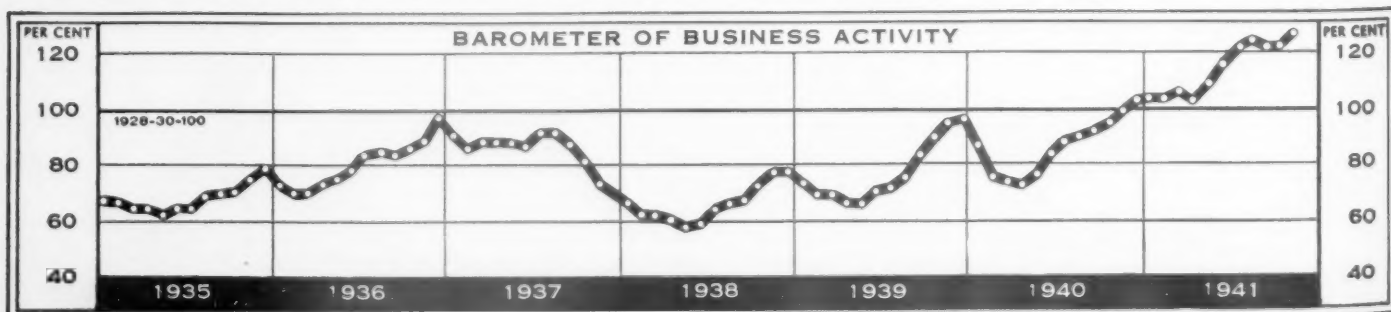
By FRANK GREENE



TOTAL industrial production, aided by increasing defense output, continued to expand in November, despite serious labor stoppages and declining non-defense activities. The coal strike reduced steel ingot output slightly to 98.3 per cent of capacity, while critical scrap shortages threatened further curtailment. Automobile stocks increased sharply as government production quotas proved to exceed retail sales. Machine tool, petroleum and paper output continued at record levels and carloadings were highest for the month since 1929. Engineering awards exceeded October but fell below 1940. Residential building reached the lowest in months as the result of restrictions on private construction. Electricity production recorded a new high.

Lowest stock market prices in three years resulted as tax sales furthered the four-month declining trend, while commodity prices advanced somewhat from October. Sales of consumers' durable goods continued to decline. Dollar volume of retail sales held high but unit transactions were only slightly above a year ago.

Country-wide effects of defense spending and high agricultural income again produce a white map



A further advance in the Barometer chart line was recorded during November, the general level of business activity rising to a new peak despite actual or threatened labor disturbances in critical defense industries

December 10, 1941.

WAR DEPARTMENT COMMUNIQUE No. 2

g made for fifth columnists.

"4 Steps to augment the defenses of both the East and West coasts commenced Sunday night when the War Department placed plans in effect which have materially strengthened the forces already stationed in those areas. The railroads aided greatly in the movement of troops and material, operating through trains to destinations on emergency schedules. In addition to the ground troops moved, the

"The railroads aided greatly" . . .

. . . and are proud to be able to do their part in carrying out plans made long before between railroads and the defense departments of the government.

The years of planning and preparation proved their worth when war struck—suddenly and treacherously—on December 7, 1941.

A united, determined America can count on its fighting forces—and its railroads!



Association of **AMERICAN RAILROADS**

WASHINGTON, D. C.

I Saw a Republic Die

(Continued from page 26)

haps one of history's greatest tragedies that so many people in France who heard long in advance the rumble of Hitler's marching legions had cried "Wolf!" so often that no one would believe them.

We had in France, as here until yesterday, the great legion of the undecided. The French middle class fell into this easy category. They were equally out of sympathy with the timidity of the peace party on one hand, and the temerity of the warmongers on the other. They loved their country and its free institutions, but they had seen little in the recent affairs of the republic to encourage them to believe that their national leaders were qualified to wage an efficient or a successful war.

Old ideals were gone

IF THEY were still devoted to the ideal of the republic, they had learned from Blum that a republic can be turned, whether its people wish it or not, along the road to permanent government control of economic life. They had seen Government, not as the arbiter between capital and labor, but as a partisan, and even as the tool of self-seeking labor leaders. Even those parts of the labor code that were designed to aid the middle class had failed to do so, because the cost of living rose faster than wages could be adjusted, and the life insurance policy, the government bond, and the savings account declined constantly in real value.

They hated what they knew about dictatorships across the Alps and across the Rhine, and it was with a profound knowledge of the desires of the French people that the Senate, the last protector of the republican tradition, refused twice to approve Mr. Blum's request for dictatorial powers, and twice threw him out of office on this issue.

On April 7, 1938, to enforce Blum's second demand for plenary powers, the French left wing unions organized a march of tens of thousands of their members upon the Luxembourg Palace where the French Senate was in session. The president of the Senate, under an old and forgotten prerogative, called out the garrison of the city of Paris and interposed the regiments of colonial troops between his bald head and the rocks of a Paris mob. Later on, the powers refused to Blum were given to Daladier and to Reynaud. But first the Government of France had been cleared of the fellow travellers, and the power of the social experimenters had been curtailed in a general bureaucratic purge.

The tragedy of France is that the time at hand was too short. It is even possible that Germany hastened her own preparations so as to face a nation that was still divided, rather than one with a new and cemented unity. In just a few more months France might have been a cohesive unit. But Hitler marched

on, and the news of the invasion of Poland fell upon a people that was morally, as well as physically, unprepared.

So, the great middle class of France, the class that fights wars, whose sons die in the mud, and whose women crouch in the cellars of bombed cities—distrusting both the peace party and the war party, bereft of leadership—approached the war dully, without conviction of right or wrong. They loved their country. They loved their democracy. They obeyed the mobilization order. But there was no motor force of revenge or of conquest; no deep understanding of the grave peril to their freedom.

The struggle between capital and labor, perhaps the greatest single factor in France's unpreparedness, created a situation analogous to that in America, where that same struggle continued up to the bombing of Pearl Harbor.

The overt crisis of France's labor war was in 1936, and was solved by the *Accords Matignon*, compared to which the Wagner Act is a model of reason and restraint. However, during 1937 and 1938 there were continued skirmishes in which labor consolidated its gains and capital tried to defend itself in a world where rising costs ever seemed to outrun rising prices, and where a new and bitter pill had to be swallowed every season.

But industry has not the stomach of an ostrich, and some of the French reforms, such as the rigid 40-hour law, were particularly indigestible. Even after Hitler's invasion of Austria, every effort to make anyone work harder or longer was immediately interpreted as an encroachment by capital. A flurry of strikes broke out in the spring of 1938, and the French airplane industry was, for a period, completely tied up. The industry had been "nationalized," and French labor was striking, not against private capital (although private management had been retained), but against its own Government.

Strikes in the face of war

EVEN several months after Munich, with the war clouds black on the horizon, the C.G.T. (the great labor federation built along the vertical lines of our C.I.O.) actually called a general strike against the labor policy of Daladier's ministry, which had turned out socialists and communists and was trying, in a last desperate effort, to set French industry rolling again. Having been for years a strike leader, rabble rouser, and friend of labor, Mr. Daladier ironically found himself, as responsible head of the French Government, facing what amounted to revolution.

A general strike started with the railways. Mr. Daladier mobilized all railway workers as members of the French army—for every Frenchman, owing to universal military service, is a soldier in reserve. To strike would have meant mutiny against the French Army, and

even ten years of leftist preaching has not removed from the Frenchman a wholesome respect for a firing squad. The strike was an absolute failure, only a few hundred hotheads taking part in it, and the power of the C.G.T. was broken forever. A sitdown strike in the Renault works was also short; the National Guard put the strikers out with unnecessary brutality. The reaction against labor treason was violent. The C.G.T. lost a million members in a few weeks, and Daladier had the absolute backing of the country when, with the Russo-German alliance, he dissolved the communist party and suppressed entirely certain communist-controlled labor unions.

Fighting instead of working

THUS France obtained, in turmoil and bitterness, the façade of a common national purpose. Unfortunately, it was but a façade, for peace agreements that are made under compulsion are fulfilled half-heartedly and are broken when convenient. French capital was beaten into a submission that it could not love, and France's labor leaders, having drunk the wines of victory, refused flatly to subordinate union advantages to the purpose of the nation.

I do not mean to say that, because French capital turned out to be the victim in the social war, it was a snow-white sacrificial lamb. French capital was a tough old billygoat, black with crime. The social reforms of the *Accords Matignon* were long overdue, and most of them were good, if taken in due season.

There was also a certain truth in labor's contention that capital was trying to use the emergency to limit labor's gains. I heard discussions along this line at meetings of my own company. The Blum Government had pushed capital and management so far to the wall that a swing of the pendulum was due whether the wartime emergency had existed or not.

French industrialists also suffered from excess individualism. I can relate a small example: Among the items in which a national shortage developed was wood pulp, which had formerly come principally from Scandinavia. The Government asked publishers to limit their newspapers and magazines to one-half the former number of pages. Naturally, such a move was possible only if all publishers collaborated, as we could not bring out our magazine with 20 editorial pages if our competitor continued to give the reader 40. One important French publisher, Mr. Prouvost, refused to collaborate. He said he had plenty of pulp. He owned his own paper mills, and had no intention of handicapping himself to help publishers who weren't well capitalized or provident enough to take care of their paper needs. The result, of course, was a government threat to solve by decree a problem which should have been ironed out among publishers themselves, and Mr. Prouvost finally toed the line.

I am told that similar instances occurred in other businesses. The crowning treason, of course, is the now well

known fact that French manufacturers of tanks and planes caused the arms ministry to delay the placing of substantial orders in America until the spring of 1940, hoping to retain a larger share of business for themselves, irrespective of their capacity to produce at once.

We also had in France the phenomenon of a people being told, in their daily press, not necessarily what was true, but what seemed best for them to hear.

The people in the dark

THE GOVERNMENT, the newspaper publishers and the broadcasting companies in America, as in France, are torn between a natural desire not to discourage the public, and the knowledge that, on the other hand, men often do their best when they realize their backs are against the wall.

I know all too well the problems of publishers who must consider the wishful thinking of their clientele, and who would be accused of defeatism if they emphasize German victories, and of dishonesty if they actually suppress bad news.

Couple the normal problems of competitive publishers with strict control by governments everywhere over news sources and the problem of adequate public information becomes almost impossible to solve. Publicity in time of war becomes a weapon to fight a "war of nerves" or to maintain national morale.

Trying to get in America a fairly good picture of where we stand, I recall the French newspapers' accounts of the war in Poland.

We read only of the minor Polish successes. The fall of Warsaw, when it could no longer be concealed, hit the French with shocking force. The same thing occurred in the battle of France. Having sources of information through embassies, and being able to listen to the foreign short-wave radios, I could follow the fighting in northern France blow by blow. Not so the man in the street. I have looked at a collection of the headlines of Paris newspapers of May and June 1940. In retrospect they would be laughable if they were not so tragic. The day the German spearhead crossed the Somme, the French press had them fighting before Antwerp. Only when a communique spoke of fighting at Forges-les-Eaux, a town in nearby Normandy, did the Paris public realize with panic that French resistance was little more than a myth.

I, for one, believe that a policy of frankness would be the better thing for America today. The French press paraded pictures of every new French airplane built in 1938-39: We were never told that they were prototypes, and that only a few of a kind existed. The same thing seems true in America today. Too many people think the job is done when government appropriates \$50,000,000,000 for defense. They fail to realize how much hard work, sweat and sacrifice are necessary to turn those billions into tanks, guns, planes, ships and food.

As the French relied comfortably and too long on "the greatest army in Europe" and the Maginot Line, so I fear that we here will fail to realize that it is not really a law of nature that one American can lick ten Germans or 20 Japanese.

No matter how colossal our production, the industrial power of German Europe and of Japan, in terms of war production, is great beyond the realization of American businessmen. European productive capacity should be studied and publicized in ways that will offset the complacency and wishful thinking that are a counterpart of what I knew in France.

There are many examples of wishful thinking in America, as in Paris before her defeat. I will speak of only one wishful thought—that there will be a revolution in Germany.

There will be no revolution in Germany! This is the opinion of every man who, like myself, did business in Germany before the war, and who has talked with dozens of German officers and soldiers after their conquest of France. There will be no revolution in Germany, first of all, because the Germans idolize their leader as no American president or individual has ever been idolized. There will be no revolution in Germany because this leadership has brought them fabulous victories and no defeats.

They remember Versailles

THERE will be no revolution even when reverses attend the German armies, because the German people is steeled by the recollection of the tragedy of their country after the treaty of Versailles. One young German officer said to me: "I was a growing boy after the peace of 1919, and we know that the peace of Versailles is nothing to what the British (sic) would do to us after a second victory. I would kill myself and my wife

and children before living through another British peace."

If Nazism is to be turned back, I am afraid that it has to be by force of arms, and not by economic war; not by sitting at our desks and wishing it to be so.

This war differs from all previous wars in many ways. One of them is this: Either you must forget your individual advantages and fight a total war, or you should not fight it at all.

France fought a half-hearted war. The French republic tried to conduct its normal existence behind the bulwark of the Maginot Line, and luxury industries of Paris, the perfumes and *haute couture*, carried on as always before.

On the other side of the Rhine was Germany, which for six years had lived under a regime which we used to call totalitarian, but which we now would call a regime of priorities. In Germany, before the war, a manufacturer could not make baby carriages or automobiles. He had to make gas masks and anti-aircraft guns.

Germany prepared for the war wholeheartedly; France prepared half-heartedly. The result for the French today is a starving country, murdered hostages, stillborn babies, 1,500,000 prisoners, a land sacked and gutted.

The French prepared for war only half-heartedly because they believed so intensely in liberty that anything that interfered with their comforts was regarded as an infringement of liberty itself.

But liberty is a very special thing, or so we discovered in France. It does not mean privileges only, but privileges modified by duty. You have to consider it the most precious thing in the world, or you will lose it.

The curious thing is that, if there is something that you considered more precious than liberty, be it your comfort or your money, before you are finished, you will lose it, too.



"I wish you'd get over your mad at the Gas Company!"

"E" is for Efficiency

THE NAVY honors patriotism where it finds it, recognizing that the man who makes a gun is as important to national safety as the man who fires it

LETTER "E," long dearly significant to Navy men afloat and ashore as award for excellence, now also stands for distinguished industrial contribution to national defense effort. Winning the coveted industrial "E" means that the designated producer has satisfied the requirements of the incentive plan authorized by the President, directed by the Navy Department, and put into effect by the Bureau of Ordnance. Purposes are:

1. To impress on management and labor the extent to which national defense depends on productive effort.
2. To instill a competitive spirit among those companies which are manufacturing equipment for the Bureau of Ordnance.
3. To recognize, through an award, the loyal efforts of those companies, workers, and management (as determined by the Production Division of the Bureau of Ordnance) which have excelled in production from all angles.
4. To form an incentive to those companies which have not yet reached a high rate of production.

In sum, awards under the plan comprehend:

1. The Bureau of Ordnance flag, which may be flown under the Stars and Stripes or on a separate flagpole.
2. The Navy "E" pennant, which may be flown under the Bureau of Ordnance flag. The "E" also may be painted on a smoke-stack of the plant or in some other suitable place, similar to the custom of the Navy to paint it on the funnel or turret of a vessel.
3. An emblem for each employee in the form of a lapel button bearing the insignia of the Bureau of Ordnance, the "E," and the name of the company.
4. The actual presentation of the flags and lapel button to management and staff at plant of the company receiving the award by a high-ranking official of the Navy.

Companies so honored, as reported up to November 26, are:

American Locomotive Company,
Schenectady, N. Y.
Arma Corporation,
Brooklyn, N. Y.
Bantam Bearings Corporation,
South Bend, Ind.

IT'S *Today's* PRODUCTION THAT COUNTS!



LET'S WIN THE NAVY "E"

for Outstanding Achievement in the Production of Ordnance Equipment

WIN THE RIGHT
TO FLY THIS FLAG



The official flag of the Bureau of Ordnance distinguishes the productive efforts of Manufacturers of Naval Ordnance.

WIN THE RIGHT
TO FLY THIS PENNANT



In the Navy, the letter 'E' is the most coveted honor for excellence in the performance of duty.

WIN THE RIGHT
TO WEAR THIS BADGE



In every plant which receives the award each employee is authorized to wear this badge.

THE BUREAU OF ORDNANCE * NAVY DEPARTMENT * WASHINGTON, D. C.

Bausch & Lomb Optical Co.,
Rochester, N. Y.

Bethlehem Steel Company,
Bethlehem, Pa.

Bridgeport Brass Company,
Bridgeport, Conn.

Cameron Iron Works,
Houston, Tex.

Carnegie-Illinois Steel Company,
Homestead, Pa.

Carrier Corporation,
Syracuse, N. Y.

Consolidated Machine Tool Corporation,
Rochester, N. Y.

Continental Gin Company,
Birmingham, Ala.

Crucible Steel Company of America,
Harrison, N. J.

E. I. Du Pont de Nemours & Co., Inc.,
Wilmington, Del.

Eclipse Machine Division of the Bendix
Aviation Corporation,
Elmira, N. Y.

Erie Forge Company,
Erie, Pa.

Erie, Pa., Works of the General Electric
Company,
Erie, Pa.

Fisher Body Division, General Motors Corporation,
Detroit, Mich.

Ford Instrument Company,
Long Island City, N. Y.

Goss Printing Press Company,
Chicago, Ill.

Heppenstall Company,
Pittsburgh, Pa.

Ingersoll Milling Machine Company,
Rockford, Ill.

International Nickel Co.,
Huntington, W. Va.

Keuffel & Esser Co.,
Hoboken, N. J.

Lakeside Bridge & Steel Co.,
Milwaukee, Wis.

Lansdowne Steel & Iron Co.,
Morton, Pa.

Mesta Machine Company,
Pittsburgh, Pa.

Midvale Company,
Ninetown, Pa.

Miehle Printing Press & Manufacturing Co.,
Chicago, Ill.

National Forge & Ordnance Company,
Irvine, Pa.

Norris Stamping & Manufacturing Co.,
Los Angeles, Calif.

Northern Pump Company,
Minneapolis, Minn.

Pollak Manufacturing Company,
Arlington, N. J.

SKF Ball Bearing Company,
Philadelphia, Pa.

Standard Steel Works Division of
Baldwin Locomotive Co.,
Burnham, Pa.

Textile Machine Works,
Reading, Pa.

The Monarch Machine Tool Company,
Sidney, Ohio

Triumph Explosives, Inc.,
Elkton, Md.

Vickers, Inc.,
Detroit, Mich.

Westinghouse Electric Elevator Co.,
Jersey City, N. J.

An Assembly Line for Houses

(Continued from page 52)

indicates the success of this plan. Construction of the first 300 houses started on May 25—they were occupied by August 15.

Are these houses permanent? Will they last the 25 years or more claimed for them by the most interested parties? That is the question most often raised by visitors and construction men who see them. No one knows for sure, but the developers have put their experimental models through every test possible and believe they have a satisfactory residence that the \$1,500 income group can afford.

The wall material is not an untried product. It has been used successfully



"No time to waste time"—in transportation, the factory, the office, or the mails . . . Production is often paced by paperwork. Wasted motions and lost time in the office may multiply man hours in the shop . . . This is the "must" period for the Postage Meter, which saves effort and time, makes mailing move faster in *your office*, helps mail move faster in the *postoffice* . . . The Pitney-Bowes Meter:

- prints postage as needed, for any kind of mail or parcel post
- seals envelopes at the same time
- saves stamp handling, sticking and counting; and protects postage from loss or theft
- automatically accounts for postage
- prints postmarks with postage, saving two post-office operations, permitting earlier departures

Models for any business, big or little. Ask our nearest office for a demonstration in your office—right away! Or write Stamford direct.



Direct Defense Production by Pitney-Bowes

Aiming device for range finder . . . by Pitney-Bowes, largest maker of postage meters in the world. One of a growing list of precision products for National Defense which will soon exceed our meter production.

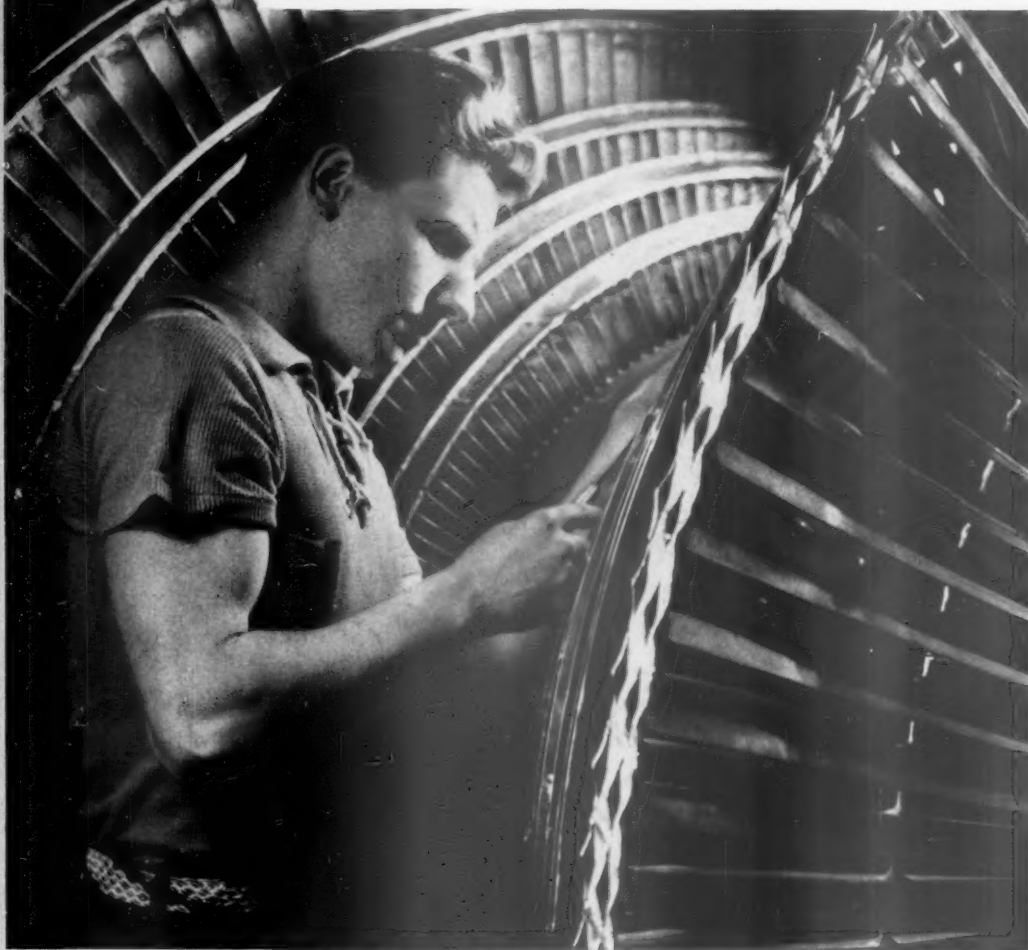
Pitney-Bowes POSTAGE METER CO.

Branches in principal cities. See telephone directory. In Canada: Canadian Postage Meters & Machines Co., Ltd.

1337 Pacific St., Stamford, Conn.



Defending Your Home.Y



Allis-Chalmers turbines drive U.S. warships...provide power for defense industries.



Allis-Chalmers motors and control

ALLIS-CHALMERS WORKERS SPEED OVER \$100,000,000 OF DEFENSE ORDERS

**Allis-Chalmers Equipment Helps Supply
Surgical Steel, Bandages, Power and Light
for Thousands of U.S.A. Hospitals!**

VITAL POWER for national defense...fine steel for precision surgical instruments...

Both are produced with the aid of equipment engineered and built by Allis-Chalmers! In fact, we make more than 1600 products that help defend American homes and American lives.

Backed by 90 years' experience, reaching into every industry, Allis-Chalmers today makes more types of capital goods than any other company.

Because of this broad background, we are able to offer manufacturers a Cooperative Engineering Service that's truly unique. Our engineers will work in close cooperation with your techni-

IN ANY OF THE
FOLLOWING FIELDS

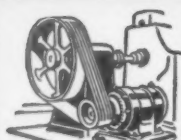
CALL  **ALLIS**



**ELECTRICAL
EQUIPMENT**



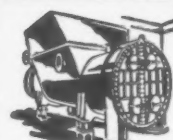
**STEAM AND
HYDRAULIC TURBINES**



**MOTORS & TEXROPE
V-BELT DRIVES**



**BLOWERS AND
COMPRESSORS**



**ENGINES AND
CONDENSERS**



**CENTRIFUGAL
PUMPS**

ne. Your Life!



equipment help produce fine steel used in delicate, precision-finished surgical instruments.

cians. Together, they will *study* and *solve* each of your equipment problems from the viewpoint of your production processes as a whole.

This ability to look at your problems *as a whole* assures you, ahead of time, that any Allis-Chalmers equipment you buy will work in perfect harmony with *all* your other machinery.

Today—when there's no time for second guesses—this is more important than ever before.

No matter what kind of problems you have—big or small—we'd like to give you the details personally on this money-saving service.

ALLIS-CHALMERS MFG. CO., MILWAUKEE, WIS.



Allis-Chalmers tractors rolling off the line to help excavate for airports...to aid farmers in harvesting food.

DEFENSE NEWS

New Process Makes V-Belts Stronger—The "Flexon" process, discovered by Allis-Chalmers, is a new way to make load-carrying cords for Texrope V-Belts.

Cords are smaller, yet 50% stronger than those used before. Combined with a new heat-resisting rubber compound and other exclusive features, they give the new Texrope Super-7 V-Belt greater pulling power and resistance to stretch...longer life to aid hard-pressed defense production.

This 90-mm. anti-aircraft gun is capable of blasting planes out of the stratosphere nearly seven miles up—another important U.S. defense weapon.



Allis-Chalmers built the first 90-mm. anti-aircraft gun mount produced by private industry in the United States, and is now in large-scale production on this vitally important defense item.

It is this gun mount, with the 3,858 separate parts that compose its delicate mechanism, on which the gun depends for extreme accuracy and mobility.

Allis-Chalmers shares this job with 225 smaller companies as subcontractors.

Thin-Metal Welding—In busy defense industries, the new Allis-Chalmers "thin-metal" welder, the Weld-O-Tron, is handling materials that have never been welded before. In aircraft factories and shipyards, sheets of metal as thin as 28 gauge are being welded with currents as low as 5 amperes, using new 1/32" and 3/64" electrodes. (Write for Bulletin B6049 for "thin-welding" data.)

ALLIS-CHALMERS

For Money-Saving Equipment And Engineering Cooperation



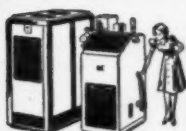
FLOUR AND SAW MILL EQUIPMENT



CHEMICAL PROCESS EQUIPMENT



CRUSHING, CEMENT & MINING MACHINERY



HOME HEATING & AIR CONDITIONING



POWER FARMING MACHINERY



INDUSTRIAL TRACTORS & ROAD MACHINERY

GOOD BUSINESS NEWS



RETIRED... with thanks

THREE YEARS ago, the Sennett Products Co.* was carrying a \$167,000 burden in the shape of an R. F. C. loan from Uncle Sam.

The loan had been negotiated, and thankfully accepted at the time, because the company's banking connections made the problem of financing difficult. Extension of credit was invariably accompanied by arbitrary restrictions that hurt. The R. F. C. loan even with its inflexible limitations, provided a more generous arrangement.

As of December 31st, 1938, the balance sheet showed:

NET WORTH	\$527,703.00
WORKING CAPITAL	45,113.00
GROSS SALES	566,118.00
LOSS	15,342.00

Then the Sennett Company discovered another route to financial freedom... Open Account Financing. From some source... an accountant, a Commercial Credit advertisement... or another user of Commercial Credit Open Account Financing, they learned things that sounded promising. They wrote to have a representative call. The upshot was that on January 1st, 1939, they started cashing their receivables with Commercial Credit Company.

See what happened in the next two and a half years. Figures tell the story.

	Dec. 31, 1940	June 30, 1941
NET WORTH	\$ 511,560.00	\$ 829,432.00
WORKING CAPITAL	57,379.00	281,385.00
GROSS SALES (12 mos.)	1,335,111.00	(6 mos.) 1,112,852.00
NET PROFIT (12 mos.)	139,853.00	(6 mos.) 331,872.00

Meanwhile, the \$167,000 R. F. C. loan has been completely paid off. The company now has no liabilities other than current.

* * * * *

Of all the difficulties that complicate business today, the problem of financing can be most easily disposed of. Instead of trying to arrange bank loans or other external credits, let your own assets, receivables and inventory, provide the cash you need. Write for a copy of the booklet, "The Case of The Preferred Purchaser." Address Commercial Credit Company, Dept. 1400.

*A fictitious name, but the facts and figures, taken from our files, can be verified.

COMMERCIAL CREDIT COMPANY

"Non-Notification" Open Account Financing

BALTIMORE

BOSTON NEW YORK CHICAGO SAN FRANCISCO LOS ANGELES PORTLAND, ORE.

CAPITAL AND SURPLUS MORE THAN \$60,000,000

in industrial construction for several years. It is at present suitable primarily for only large housing projects where standardization is possible and maximum speed is imperative. Present production capacity is hardly capable of keeping up with defense orders. But officials of the Celotex Corporation "hope" that post-war public demand for low-cost housing may make it possible to build the homes for \$2,000 or less, not including the land.

Remember early radios

NO ONE is predicting that these houses are the final answer to the quest for a perfect, inexpensive home, or that the material will supplant other traditional building products. J. F. O'Brien, general manager of the Pierce Foundation, says:

It is only the first step toward mass production of low-cost houses for the lower income group. That house may seem crude today and will surely seem crude tomorrow, but so did the first automobile and the first radio.

Plans for the entire development are still uncertain because the Government has been slow in arranging for additional housing. Farm Security Administration let contracts for 1,200 houses early in November. In addition, the Government has granted priorities for the construction of 3,000 houses in the community. Mr. Martin hopes that private operators will erect them. But, regardless of who builds them, he still envisions a new and permanent city built to meet his conception of a self-contained "village"—a community where people want to live because it provides a well rounded home environment.

If the attitude of the present occupants of the new homes is any criterion, the Martin concept of a contented people is beginning to bear fruit. They have frequently expressed their preference for their new homes over those in a so-called slum clearance project six miles out in the country from Baltimore. A Baltimore newspaper investigator recently reported that houses in the slum-clearance project had cracks in the wall through which he could see daylight.

The Martin tenants prefer their linoleum covered wooden floors, to the cold, cement floors of the government project and like particularly the sunshine that pours in that great expanse of glass.

Most of them seem to believe that, for \$30 a month, they are getting a five-room house that can't be equaled for the same money under comparable circumstances.

PACIFIC GAS AND ELECTRIC CO.

DIVIDEND NOTICE

Common Stock Dividend No. 104

A cash dividend declared by the Board of Directors on December 17, 1941, for the quarter ending December 31, 1941, equal to 2% of its par value, will be paid upon the Common Capital Stock of this Company by check on January 15, 1942, to shareholders of record at the close of business on December 31, 1941. The Transfer Books will not be closed.

D. H. FOOTE, Secretary-Treasurer.
San Francisco, California

Gas Rationing a World Interest

WORLD'S concern to save gasoline has passed rapidly from admonitory to enforcement measures, is a matter of rationing in anti-Axis and neutral countries as well as by Axis powers.

Great Britain, which rations gasoline through a petroleum department under the secretary of mines, recently ordered an additional reduction of 50 per cent in gasoline used by private cars. With previous cuts, new ration will limit private drivers to approximately 100 miles' travel a month. Commercial vehicles have been receiving about 29 gallons a month for each ton up to four tons.

Canada established a 7 p.m.-7 a.m. and Sunday curfew and now limits sales of gasoline to two specified grades. In October each dealer was allotted for distribution 75 per cent of the amount of gasoline he sold in July.

Substitutes required

IN Brazil, a recent "*gasogenio*" law requires owners of ten or more trucks or buses to operate a tenth of their vehicles on gas obtained from burning wood or charcoal. This fuel will also power agricultural machinery. Alcohol made from Brazilian cane sugar is widely used. A lubricating oil made by mixing the native petroleum with castor oil and the oil of a wild Brazilian seed now is in production.

Australia, New Zealand and the Union of South Africa are trying to coordinate their civilian consumption of gasoline by establishing uniformity in their rationing systems and by rationing tanker transportation. Australia, controlling the importation and distribution of petroleum by means of quotas for each oil company, will substitute fuel from wheat, sugar and molasses, rectified spirits, methane gas and benzol to cover one-sixth of present consumption. Private passenger cars are allowed gasoline for 1,000 miles a year.

In New South Wales it is estimated that 82,000 cars will be laid up because of lack of fuel, causing a loss of \$4,000,000 in gasoline tax revenue. New Zealand has ordered the elimination of overlapping milk routes as a conservation measure.

The Japanese-controlled government in Nanking recently announced a cut of 50 per cent in gasoline supplies to private cars, taxis and trucks. Buses and oil trucks were exempted.

Italy, beginning October 1, forbade use of gasoline for civilian automobiles entirely.

**- PROMISE TO
TAKE CARE OF
YOURSELF !**



**- DON'T WORRY
I'M TOUGH AS
CAST IRON PIPE**

AND his health will be guarded, while in training camp, by a pure water supply and modern sanitation facilities in the construction of which hundreds of miles of cast iron underground mains have been installed. The *proved* useful life of cast iron pipe is more than a century in its original location or elsewhere—at least double the *estimated* life of other pipe used for the same purposes. It has definite salvage or re-use value. And by avoided costly replacements which would be necessary with shorter-lived pipe, cast iron pipe helps keep down local taxes. It is the only ferrous metal pipe, practicable for underground mains, which rust does not destroy.



Unretouched photograph of more-than-century-old cast iron pipe still serving and saving taxes in Detroit.



Pipe bearing the above mark is cast iron pipe. Made in sizes from 1 1/4 to 84 inches.

**CAST
IRON
PIPE**

*No. 1
Tax Saver*

CAST IRON PIPE RESEARCH ASS'N, T. F. WOLFE, RESEARCH ENGINEER, PEOPLES GAS BLDG., CHICAGO

HOW YOUR EMPLOYEES CAN GET A \$50 LOAN FOR \$4.48 (TOTAL COST)

HOW MUCH does it actually cost your employees to borrow from a small loan company? The rate of charge is higher, of course, than that your company pays for commercial funds. The cost of making and collecting many loans for small amounts is bound to be far greater than the cost of making and collecting a few loans for large amounts. Despite this, the charges on small personal loans, in actual dollars and cents, are probably considerably lower than you have thought.

Take a \$50 loan repaid in six monthly instalments of \$9.08 each. The borrower gets \$50 and repays a total of \$54.48. The cost of his loan is thus \$4.48. This charge includes everything. There is nothing more to pay. A \$100 loan, repaid in six monthly instalments of \$18.15 each, a total of \$108.90, costs \$8.90.

Prepayment reduces cost

Borrowers at Household Finance pay charges only for the actual time they have the money. The sooner a loan is repaid the less it costs. Payment schedules are usually arranged to fit the borrower's income and pay day. If he should receive a bonus and wish to repay part or all of his loan ahead of schedule, he may do so. The charges are reduced in exact proportion to the extent of the prepayment.

No endorsers required

The job of Household Finance is to supply, at reasonable cost, a legitimate source of credit for wage-earners. At Household workers can borrow from \$20 to \$300 largely on character and earning ability. No endorser is needed. The loan is made in a simple, private transaction. Last year Household made over 800,000 such loans to workers in all branches of industry.

The table below shows some typical loan plans. The borrower may choose the schedule which best fits his own situation. Payments include all charges. Charges are made at the rate of 2½% per month (less in many territories on larger loans). Household's charges are below the maximum rates authorized by the Small Loan Laws of most states.

We will gladly send you more information about Household Finance service without obligation. Please use the coupon.

WHAT BORROWER GETS

	WHAT BORROWER REPAYS MONTHLY				
	2 payments	6 payments	12 payments	15 payments	18 payments
\$ 20	\$ 10.38	\$ 3.63	\$ 1.95		
50	25.94	9.08	4.87		
100	51.88	18.15	9.75	\$ 8.08	\$ 6.97
150	77.82	27.23	14.62	12.11	10.45
200	103.77	36.31	19.50	16.15	13.93
250	129.71	45.39	24.37	20.19	17.42
300	155.65	54.46	29.25	24.23	20.90

Above payments include charges of 2½% per month and based on prompt payment are in effect in seven states. Due to local conditions, rates elsewhere vary slightly.

HOUSEHOLD FINANCE

Corporation

ESTABLISHED 1878

Headquarters: 919 N. Michigan Ave., Chicago

One of America's leading family finance organizations, with 302 branches in 200 cities

HOUSEHOLD FINANCE CORPORATION, Dept. NB-A
919 N. Michigan Ave., Chicago, Ill.

Please tell me more about your loan service for wage earners—without obligation.

Name

Address

City State

Low Octane Count Follows O.P.M. Decree

OCTANE hasn't meant much to the average motorist heretofore, notwithstanding the publicity of petroleum advertisers. But that is one of the many things the war is changing. It all came about through the current tetraethyl lead controversy.

Tetraethyl lead is used in the refining of about 85 per cent of gasoline fuel. As all drivers know, it adds an important anti-knock quality, besides yielding other efficiencies in motor operation. In terms unscientific but roughly accurate, the tetraethyl lead

content of gasoline is measured by "octane rating." Other products are used by several companies to step up the octane rating but they are a relatively small factor in the whole market.

O.P.M. has lately restricted the allocation of materials for tetraethyl lead, principal of which is pig lead, to 70 per cent of 1941 production. This at a time when requirements for 1942, civilian and military, are estimated at not less than 33 per cent more than for 1941.



Examining eyes for diet deficiency

Vitamins in Airplanes

A definite, practical experiment to keep workers in top physical condition by use of vitamins has been begun by the Lockheed and North American aviation companies.

One thousand workers at the plant placed themselves in the hands of medical and nutrition experts of the National Research Council and began taking a course of vitamins that is expected to give them better vision, reduction of fatigue and a generally improved physical condition.

The volunteers submitted to medical examination before starting the course, were tested for vitamin deficiency and will receive free nutritional supplement for six to nine months. At the end of the survey they will be told how to maintain a good nutritional status on a balanced diet of ordinary foods.

The refiners have been contending for a revision of this order. They say that it would involve a reduction of five points in average gasoline octane rating. That would result in a very material increase in petroleum consumption, with consequent expansion of existing facilities for refining and transportation, they maintain.

One estimate placed the additional crude oil necessary to process in compensating for a five-point octane reduction at 2,500,000,000 gallons a year.

Further, it is said that a five octane number decrease in gasoline would necessitate service station adjustment of at least half the cars in service, and for those high-compression cars now requiring a fuel that rates 80 octane or more, a reduction of the fuel index to 70 would mean nothing less than a rebuilding job.

Low price causes shortage

THE O.P.M. restriction hinges on the Government claim that lead now being used in refining high-test gasoline for civilian consumption is needed by the military establishment. To this the oil men reply that their needs—only 1½ per cent of the total lead production at present—can easily be satisfied if only the Government will let the lead price rise by about two cents, to what would be a natural level today. With that reward to producers, the supply now requisitioned by the Government would not be depleted at all, in fact could be increased by 20 per cent if necessary.

And therein is the low octane rub. The Office of Price Administration has set a price ceiling on lead, which it is unwilling to change to meet these circumstances. No one questions that there is a large slack in lead mining capacity—marginal mines that would quickly be placed in operation by their owners if the price were as much as seven cents a pound instead of the fixed 5.85. During the first World War lead went up to 12.5 cents. Even in pre-war 1937 it was selling at a higher figure than the present Henderson maximum.

The tetraethyl lead producers have suggested that if the general price level is not altered they be granted some arrangement under which they could pay a special bonus to the marginal lead mines. They have even indicated a willingness to buy some of these mines to be operated by themselves.

This situation puts up to the Government what is, in the opinion of petroleum and lead men, a choice of deliberate scarcity imposed by inflexible price decree or abundance for both military and civilian needs through proper price incentive.

Does shortage of raw materials threaten your business?

Newly-developed strength and versatility of flat GLASS may answer your problem!

IF your business is suffering from a shortage of essential production materials, perhaps you can find the answer to your troubles in glass.

Already, flat glass products, in a wide variety of shapes and forms, have proved themselves fully capable of replacing various defense materials in applications of many kinds. For glass today is a different material from what it used to be. New developments have given it far greater strength, resistance to shock, elasticity, and sales appeal

due to a wide variety of colors.

Perhaps the substitution of glass in your product or equipment may be thoroughly practical, may even result in an actual improvement in saleability or efficiency.

We invite you to submit your shortage problem to our technical development department, and let us help you find a way to solve it with glass. There is no obligation involved. Write us on your letterhead. Address Pittsburgh Plate Glass Company, 2034-A Grant Building, Pittsburgh, Pa.

Check these properties of GLASS against your needs

- Smooth, hard, level surface, of extreme accuracy if required.
- Great compressive strength.
- Practically incompressible.
- Easy cleaning.
- Low coefficient of expansion compared to metals.
- Unique dielectric and heat transmitting properties.
- Modulus of elasticity — 10,000,000.
- Modulus of rupture — 6500 to 29,500 lbs.
- Poisson's ratio — 0.244.
- Unaffected by any atmospheric conditions.
- Immune to attack by practically all fumes and chemicals.
- Wide selection of colors.
- Exceptional beauty.

PITTSBURGH PLATE GLASS COMPANY

"PITTSBURGH" stands for Quality Glass and Paint

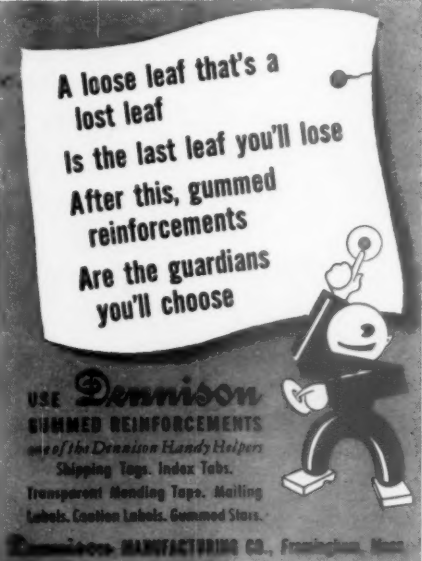


HARTER

In smart, modern offices, where efficiency is the watchword, there you will find Harter Posture Chairs and other Harter Seating Equipment. Thousands of these famous chairs are performing meritorious service in the great army of the Home Front—conserving energy, increasing output, speeding Defense at its very source.

Expert design and workmanship, finest materials and constant improvement—this is the Harter "long view" policy which has provided so ably for today. This is the policy which will be maintained to provide for tomorrow.

THE HARTER CORPORATION
Makers of Fine STEEL Chairs
STURGIS, MICHIGAN
BRANCH OFFICES: New York, 354 Fourth Avenue.
Chicago, 14 E. Jackson Blvd.



A loose leaf that's a lost leaf
Is the last leaf you'll lose
After this, gummed reinforcements
Are the guardians you'll choose

USE **Dennison**
GUMMED REINFORCEMENTS
one of the Dennison Handy Helpers
Shipping Tags. Index Tabs.
Transparent Mending Tape. Mailing Labels. Caution Labels. Gummed Stars.

Dennison MANUFACTURING CO., Framingham, Mass.



See
WOODSTOCK
TYPEWRITER

A Retailer Looks at the War

(Continued from page 28)

Even under the most favorable circumstances, at least while the memory of the present world upheaval lingers on, it seems doubtful that our country will ever again permit itself to be without a two-ocean navy and an air force equal to that of any other country.

A simple program needed

FACING all that this prospect implies, retailers should be impressed with the tremendous stake they have in common with each other and with all other branches of business.

In fact, the most urgent long-view need that confronts our country today is for all business to close its ranks and present to the confused people of our nation a simple and unified program for the continuance of our cherished way of life—the American system of free and private enterprise.

If there is such a simple and unified plan in existence today I do not know of it. On the contrary, I seem to recall that, on frequent occasions, some of the leading trade associations have appeared to be lined up on "opposite sides of the fence," so to speak.

This may be democracy at its best, but it comes close to being public relations at its worst.

I would like to see the representatives of all our leading trade associations get together in one convention hall, determined to remain in session until they found a realistic answer to the threat of inflation, a sound formula for our vexing labor problems, a firm policy regarding non-defense expenditures and a pattern for an equitable system of taxation.

I am not ready with the required "answers" to spring upon a waiting world. I wish I were. But I feel certain that the best minds of business can work out a satisfactory program without much difficulty and without much delay.

A continuous selling job

THE second suggestion is for American men and women of business to become vocal. To cease being preoccupied with the selling of their wares and to become occupied with selling to the public their important function in the social community—their real place in the scheme of things. To cease being parochial in their thinking. To cease taking for granted our system of representative government and our system of civil liberty.

These systems are not ours for the asking. They are ours only for the giving. To keep them, we must give of ourselves to public service constantly.

Another suggestion is that, in becoming vocal, we strike the right note. We must not only say the right things. We must say them to the right people. One heart-to-heart talk with 100 employees or customers is worth more than a dozen talks with that many fellow business

men. Finally we must speak, not in the parlance of business but in the simple language that the public understands.

A few months ago in hectic, traffic-congested Manhattan, while riding downtown in a taxicab, I remarked to the driver:

"Well, I suppose you'll be glad when the emergency is over and we get back to normal times again."

The cab driver's answer was as illuminating as a flash of light. "Not me, mister," he replied. "Back to normal times? Back to work relief and home relief? If that is 'normal' times, the emergency can go on forever as far as I'm concerned."

Now to that taxi driver, and to millions of others, the preservation of what we have or what we had is simply not enough.

The present emergency must offer a more promising objective than a return to conditions as they existed before this crisis developed. Peace must mean hope—and the radiant vision of a better, more secure, America.

Interested in tangibles

GENERALIZED statements, lofty slogans and high-sounding phrases create little stir in the minds and little emotion in the hearts of men today. "Save the world for democracy" may have aroused a militant spirit of patriotism 25 years ago.

But the average American of 1941 is interested in tangibles—in the material things he can understand and see in his mind's-eye.

This is not to imply that he is any the less patriotic than his prototype of 1917. We must remember that he has just skimmed through ten years of bitter depression—ten disillusioning years, when prosperity was invariably "just around the corner."

A characteristic statement which all of us have heard repeated over and over again is the "preservation of private enterprise." It is meaningful indeed to the men and women of the business world; more meaningful than ever before as, now that we are at war, the centralization of government becomes a circle that tightens with the hours.

Yet, this is my firm belief: We may cry "preservation of private enterprise" until the crack of dawn—and it will contribute little to the preservation of private enterprise!

Then, what can we say? We can change one word of our abstract phraseology.

We can say, "Promise—the promise of private enterprise." And we can translate what private enterprise promises into tangible, understandable terms. When everyone understands the full and glorious meaning of that promise, we may rest assured that private enterprise will be preserved.

After the war is over, the welfare and

the well-being of the individual American will never be assured by government enterprise. The most casual study of history will bear that out. Private enterprise, and that alone, will create the new products, develop the new services, provide the new jobs and opportunities. A comfortable home with modern conveniences; good, healthful food and clothing; a shiny, smooth-running automobile or, perhaps, a plane; telephones, radio and television; a pay check for an honest day's work every pay day; the chance for every man to advance himself in accordance with his intelligence, talents and ambition. These are American tangibles and incentives that the public will thoroughly understand and appreciate. And they are never derived from government enterprise, with its regimentation and bureaucracy; only from private enterprise, with its genius and its rich rewards.

The "promise of private enterprise" has a welcome connotation. It conjures up a dream that Mr. and Mrs. America can immediately comprehend. A dream worth fighting for and, also, worth sacrificing for.

When that promise is held forth—so clearly that all who read and hear may understand—then will 130,000,000 Americans march forward together towards that kind of peace and security that only a free people, aroused and determined, can hope to attain.

Child Labor Figures Shrink

CHILD LABOR situation, as revealed by Census sampling of 154,000 enumeration districts, shows a ten year decrease of 29 to 41 per cent in the age groups, 14 years to 17 years, inclusive. Although comparisons of the 1940 and 1930 figures are not exactly comparable on the bases of "labor force" and "gainful workers," totals for the 14-15 years bracket dropped from 431,790 to 255,336, off 40.9 per cent. The 16-17 years group declined from 1,478,841 to 1,047,316, down 29.2 per cent.

Respective aggregates of the two groups were 1,910,631 and 1,302,652, a shrinkage of 31.8 per cent for the ten-year period.

Quick to interpret and qualify the Census report was the National Child Labor Committee. Face significance of the percentage changes prompted warning that "We must be careful to weigh such gains against our precarious new prosperity." Reasons given for Committee's dubious acceptance:

The expanding defense program has already caused a sharp increase in the employment of 16-17-year-old minors and all data as to late summer and fall harvest conditions would seem to indicate that a similar condition has already begun to prevail in the younger age group. Certain State Departments of Labor also reported an increase in the number of 14- and 15-year-old minors illegally employed.

KEEP PRODUCTION ROLLING WITH MORSE ROLLER CHAINS



On many machines, in many plants, the change to Morse Roller Chain drives has boosted production to new highs, set new records for sustained productivity. First cost is low—maintenance costs are lower, due to the exclusive long-life features not available on less satisfactory drives!

Regardless of your chain requirements there is a Morse Roller Chain to meet them efficiently, economically. All sizes and capacities, single and multiple widths.

Call the Morse man. He'll help you look for places for profitable use of Morse Roller Chain Drives.

**Oil gets in —
Wear stays out!**

Life-preserving film of oil, flows through channels from bushings to heart of chain.

SOLID ROLLERS

SILENT CHAINS

ROLLER CHAINS

FLEXIBLE COUPLINGS

CLUTCHES

MORSE positive DRIVES

MORSE

CHAIN

COMPANY

ITHACA N. Y.

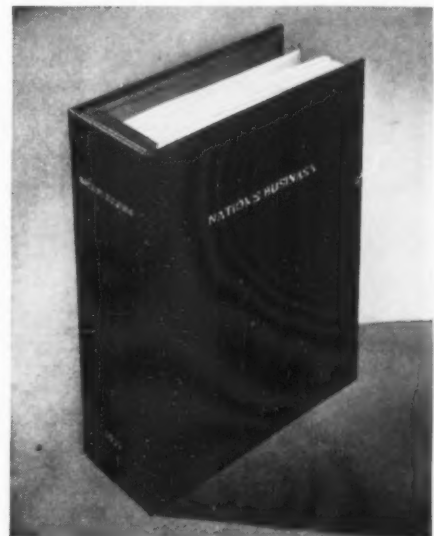
DIVISION

BORG-WARNER CORP.

You can get a
BINDER
for Your copies of
Nation's Business
for only **\$1.15**

AS a convenience to those of our readers who desire an inexpensive way to bind their copies of NATION'S BUSINESS, we will supply a Permo Binder of simulated leather for \$1.15.

This binder is a good one. It is strong, practical and simple to use. No punching or marring of the magazine is necessary. A click and the copy is in. Any issue can be removed without disturbing the other copies. Each binder holds twelve issues.



Send your order today to

NATION'S BUSINESS
WASHINGTON, D. C.

What About Your Government Defense Contract?

There are mutual rights and liabilities that you should understand fully—and you can if you have on your desk for quick reference—

THE LAW OF Government Defense Contracts

By
Theodore W. Graske
of the Michigan Bar

PRIORITIES — LABOR — COST-PLUS-A-FIXED-FEE-CONTRACTS — AMORTIZATION OF EMERGENCY FACILITIES — ARBITRATION — ETC.

The author, Mr. Theodore W. Graske, is at present an attorney with the FEDERAL WORKS AGENCY and has extensive experience in government matters having served as counsel with various government departments.

ONE VOLUME — \$7.50

Order your copy to-day.

BAKER, VOORHIS & Co., Inc.
30 Broad St. New York, N. Y.

TRY THIS WAY TO CUT COSTS FREE!

Diagraph-Bradley Stencil Machines cut costs, prevent stray shipments, save time for thousands of satisfied users. Try a Diagraph-Bradley in your shipping room at our expense. See how it adds efficiency worth many times its low price. Write or wire and we'll deliver a machine. No obligation. Diagraph-Bradley Stencil Machine Corp., 3753 Forest Park Boulevard, St. Louis, Mo.

DIAGRAPH-BRADLEY
STENCIL MACHINES
Speeding Shipments Since 1893

when the
NATION'S BUSINESSMEN
go to Washington

RATES FROM \$5

THE Carlton
16TH & K STREET - WASHINGTON, D.C.

Henry Ford of the Spindizzies

(Continued from page 42)

the spindizzy addicts. They work after school, Saturdays, and vacations. Minimum wage is 50 cents an hour. Hiller has a serious labor problem because various San Francisco and Oakland defense plants have discovered that any kid working in Hiller's backyard is likely to be a top-notch mechanic. Hiller is used to losing his most experienced men. However, some of the best men in the plant are only 14 or 15 so he expects to keep rolling along.

The Comet market is world-wide. He has shipped cars to South Africa, the Dutch East Indies, the British Isles, and Singapore.

Advertised nation wide

THE Comet is advertised nationally in several mechanical and boys' magazines. In addition, Hiller has a 16 mm movie of the spindizzies in action which is available for showing to Boy Scouts, high schools, youth conventions, and any other spots where he thinks a few customers might lurk. One thing that doesn't quite satisfy Stanley is his dealer set-up. Shops specializing in model supplies are his major outlets—and they mostly exist only in the larger cities. But then, after all, Ford, too, had quite a bit of dealer grief in his day.

Priorities so far have been no great headache to the plant. In the past, however, Stanley turned out a special deluxe job with an aluminum body. Now everybody has to take the regular pressed steel. The regular jobs, as they come from the factory, will do about 60 miles an hour—the aluminum job, due to its

light weight, could get up around 75. Both jobs, if tinkered with considerably by expert owners, can speed up fast enough to shoot for records.

If Stanley should stop building spindizzies it would be for another reason. U. S. Army engineers, checking Bay Regions plants to see if they could be fitted into the national defense picture, nearly passed out with astonishment when they ran across this gang of kids—and their eyes began popping at the beautiful precision of some of the workmanship. They let Hiller understand that he might be called any minute to turn his floor space, with his 14- and 15-year-old craftsmen, to defense production. He's more than willing—but he has other ideas personally. Hiller managed, just the other day, to qualify for a private pilot's license—and as soon as he is old enough he has plans concerning the air corps. Next semester he enters college, taking an engineering course.

As to his future career, he has some ideas about the production end of the aviation business. Stanley thinks there will be terrific after-war demand for cheap, lightweight, foolproof, touring planes. Another angle, he figures, will be a demand for economical freight planes, small but capable of packing a heavy load of mail and express as feeders from smaller communities.

When young Mr. Hiller starts thinking, things seem to happen. Of course, a good many plane manufacturers state firmly that the mass production of commercial planes is impossible. But, as the auto engineer declared, "This Hiller kid just doesn't know you can't do such things."



"I still say you should advertise"

Indispensable Value

(Continued from page 46)

making of recommendations on many other problems.

They can assist in the discovery in industry of needed executive and technical personnel for governmental service.

For many industries they can provide advice on specifications for defense purchases.

They provide an excellent medium for distribution of information, especially to the smaller members of an industry who cannot afford expense of private services, regarding priorities and allocations, defense contracts and specifications, statutory enactments, and rules and regulations relating to defense.

The situation requires both the best and the maximum from everyone and from every institution. Winning this war requires superior organization.

Out of the "War Service Committees" of the first World War grew many new trade associations. Mr. Bernard Baruch, chairman of the War Industries Board of 1917-18, said that the trade associations of that crisis were "of indispensable value" in facilitating contacts between the several sections of his Board and the corresponding branches of industry.

Trade associations in this crisis will maintain that tradition.

Effective Results

(Continued from page 46)

ties—blackouts; evacuation and care of refugees; the care of wounded and dependents; our health and recreational facilities. Chambers of Commerce have had abundant experience in setting up similar emergency activities.

Information—We must bring home to our people the need for sacrifice in many efforts—for the conservation of all of our resources, even to fuel, food, clothing and home furnishings, if necessary.

Promotion—Here fall our Defense Bond Sales campaigns; campaigns for the U. S. O., Red Cross, Community Chests and additional Y.M.C.A. funds. Again, day-to-day work of every Chamber of Commerce.

In all of these activities, business men, working through their Chambers of Commerce, can achieve best and quickest results. On the staff of your Chamber of Commerce you will find men and women who know you—who are interested in you personally because you are part of the community which they serve. They won't know all the answers, but they will know where to get them—and quickly.

BUSINESS MEN OF AMERICA—Use your Chambers of Commerce; they are geared for action. Recognize them as the focal point around which both your business and community efforts should be centered. Call upon these organizations for assistance and at the same time pledge them your cooperation.

The NATURAL INDUSTRIAL CENTER of the WEST

"It's a natural for you, Jim..."

"See, right here at the center of the Pacific Coast... the logical distribution point for reaching the 14,000,000 high-purchasing-power citizens of the 11 Western States the most economical way.

"It's the mainland terminus of three transcontinental railroads, and a recognized port of call. Terminus of two transcontinental highways, too, with a huge network of paved highways for fast shipping by truck.

"Really, Jim, I don't see how you could find a better western location. I happen to know you could get a



site on rail close to water transportation facilities. "Sure! Plenty of power, hydro-electric and steam. And low cost natural gas and oil fuel.

"No, you wouldn't be pioneering... more than 150 nationally-known manufacturers have plants there. "You couldn't do better, Jim... why don't you write these people? They'll make a Special Survey to show just how they can meet your particular requirements."

METROPOLITAN OAKLAND AREA
389 Financial Center Building . . . Oakland, California

METROPOLITAN OAKLAND AREA

CALIFORNIA

THE
NATURAL
INDUSTRIAL
CENTER
OF THE WEST

ALAMEDA • ALBANY • BERKELEY • EMERYVILLE • HAYWARD • LIVERMORE • OAKLAND • PIEDMONT • PLEASANTON • SAN LEANDRO • RURAL COMMUNITIES OF ALAMEDA COUNTY

STOP ERRORS *with* DIRECT SUBTRACTION!

THE R. C. ALLEN PORTABLE "95"

ADDING MACHINE WITH

DIRECT SUBTRACTION KEY

(All deductible amounts in red)

\$99.00
PLUS
TAX

This outstanding model also provides:

- RIGHT HAND CONTROL, LEAVING LEFT HAND FREE
- CORRECTION AND REPEAT KEYS
- FEATHER TOUCH OPERATION, LIGHT HANDLE PULL

Full Listing Capacity \$99,999.99

**AUTOMATIC CLEAR SIGNAL
VISIBLE DIAL**



FOR SMALL BUSINESS THE FAMOUS R. C. ALLEN MODEL "66"



\$63.00
Plus Tax

ADDS UP TO \$9,999.99

The only adding machine at this price with Automatic Clear Signal, Visible Dial, Automatic Ciphers and Self-Correcting Keyboard.

Standard Adding Machines • Portable Adding Machines
Bookkeeping Machines • Statement Machines • Cash Registers
Calculators • Accessories • Supplies

For Complete Information Mail This Coupon

ALLEN CALCULATORS, Inc., 678 Front Ave., N.W., Grand Rapids, Mich.
Have your Local Representative furnish, without obligation, complete information on:

- ☐ R. C. ALLEN PORTABLE "95" WITH DIRECT SUBTRACTION
☐ R. C. ALLEN MODEL "66" PORTABLE ADDING MACHINE

Name.....Title.....

Firm Name.....

Street.....City.....State.....Phone.....



THE Industrial Distributor is a mighty busy man today. Most efficient, rapid source for all kinds of industrial equipment, his unique services are taxed to the limit by industry under pressure of the defense program. His is the job of bridging the gap between manufacturing-supplier and manufacturing-consumer — cutting precious hours off delivery and installation dates on vital items of equipment.

A nationwide network of these local business men - leading representatives of their field - comprise the one outlet for Republic Mechanical Rubber Products. Carefully chosen for their particular qualifications to sell and service mechanical rubber needs, these accredited distributors display Republic's emblem of approval and are, in fact, a coordinated part of the Republic organization. A true "sign of the times," the Republic Distributor Emblem assures the maximum advantages of today's most advanced method of distribution. **REPUBLIC RUBBER DIVISION OF LEE RUBBER AND TIRE CORPORATION, YOUNGSTOWN, OHIO**

REPUBLIC RUBBER



HOSE • BELTING • MOLDED GOODS
PACKING • EXTRUDED PRODUCTS

Index of ADVERTISERS January • 1942

	Page
Addressograph-Multigraph Corporation	53
Allen Calculators, Inc.	73
Allis-Chalmers Mfg. Co.	64, 65
Aluminum Company of America	3
American Cyanamid Company 3rd Cover	
American Telephone & Telegraph Company	2nd Cover
Association of American Railroads	55
Baker, Voorhis & Co., Inc.	72
Bendix Aviation Corporation	76
Bullard Company	9
Burroughs Adding Machine Company	47
Carlton Hotel	72
Cast Iron Pipe Research Association	67
Chase National Bank	1
Clark Tractor, Division of Clark Equipment Company	57, 58, 59, 60
Commercial Credit Company	66
Dennison Manufacturing Company	70
Diagraph-Bradley Stencil Machine Corp.	72
Erie Railroad System	75
Fairbanks, Morse & Company	2
Felt & Tarrant Mfg. Company	51
Fruehauf Trailer Company	12
General Electric Company	6
Goodyear Tire & Rubber Company	10
Harter Corporation	70
Household Finance Corporation	68
International Harvester Company	4
Liggett & Myers Tobacco Company	4th Cover
Metropolitan Life Insurance Company	49
Metropolitan Oakland Area	73
Morse Chain Company	71
Norfolk and Western Railway Company	7
Pacific Gas & Electric Company	66
Package Machinery Company	8
Pitney-Bowes Postage Meter Company	63
Pittsburgh Plate Glass Company	69
Republic Rubber Company	74
Woodstock Typewriter Company	70